THE MAGAZINE OF

Standards

The Latest Instrument Standard (page 33)

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MARGINAL NOTES

Why International Recommendations?

American representatives taking part in international work on textiles (page 38) have indicated that groups concerned in the United States will reap substantial gains from international activities.

George S. Buck, Jr, was one of the group who reported on this work October 18, 1956. Mr Buck is Technical Service Director, National Cotton Council of America, and a USA delegate to meetings of the International Organization for Standardization's technical committee ISO/TC 38. He told about the progress being made in developing international methods for testing cotton fibers.

"The most significant gains," he said, "will be in the merchandising of American cotton, where the draft ISO recommendations will permit better interpretations of the quality of our cotton and better agreement between our merchants and their European cotton mill customers."

On the national scene, millions of dollars worth of textile materials are bought and sold every day, Professor V. L. Whittier, chairman of ASTM Committee D-13, pointed out at this same meeting. "Acceptance or rejection is based on specifications involving ASTM or American Standard methods of test," he said. "Mill processing and the quality of products have improved greatly as a result of using standard methods of test during the manufacture of textile materials. Textile research has become of great importance to the industry and there is no question about the benefit of standards in this field."

Standards from Other Countries—

The American Standards Association's sales records for January show a marked increase in demand by American firms for standards from other countries. More than 50 standards from different countries, in the fields of electrical engineering, machine building, structural steels,

and many others, were purchased by American firms which are either bidding for orders abroad or already carrying on work there, or who are supplying machinery for contractors abroad. In addition, many telephone calls and personal visits have been made to ASA's Library for information on standards work in other countries.

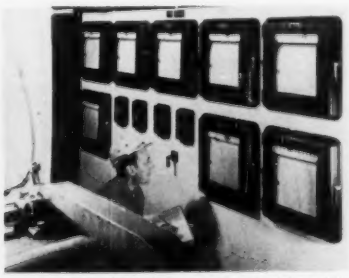
On the other hand, a growing interest in American Standards by organizations in other countries has been noted, particularly by firms in Germany, France, and Sweden.

More than 700 standards and more than 300 draft standards, received from other countries during the early part of January, 1957, have been added to the growing collection of standards now available in ASA's Library. Each month, THE MAGAZINE OF STANDARDS publishes a representative list of titles selected from those standards recently received from other countries.

Confusion in Identity—

Undoubtedly all standards engineers have already noticed the confusion in identifying the "past-president" and "president" of the Standards Engineers Society on page 16 of THE MAGAZINE OF STANDARDS, January, 1957. "W. L. Healy, past-president," was incorrectly identified as "Madhu S. Gokhale, president," and vice versa. The editors' apologies to both gentlemen.

The Front Cover—



Leeds and Northrup—Jones and Laughlin

Null-balancing recording instruments (see article page 33) play an important role in many phases of industry. Here, this single temperature control panel entirely controls the carbon restoration of cold-finished bar stock in a car-type furnace.

This Month's Standards Personality

PHILIP H. CHASE, engineer and inventor, and now chairman of ASA's Electrical Standards Board, is widely known as the efficient and genial general chairman of the International Electrotechnical Commission's Fiftieth Anniversary at Philadelphia, in September 1954. His good nature under stress and his unfailing kindness and courtesy won the admiration and friendship of all who met him there. That same ability to keep things moving and at the same time to keep divergent temperaments under control will be highly valuable to the work on American Standards in the electrical field under the supervision of the Electrical Standards Board.

A native of New Hampshire, Mr Chase was graduated from Dartmouth College with an A.B. degree and from Massachusetts Institute of Technology with an S.B. in Electrical Engineering. He received his M.E.E. in Electrical Engineering from Harvard University.

He started his career with the Public Service Electric and Gas Company of New Jersey as Assistant Superintendent in 1910. His next experience was with the American Railway Company of Philadelphia where he served as Chief Electrical Engineer.

In 1921 he joined the staff of the Philadelphia Electric Company and has worked with that company ever since. Starting as Assistant Engineer, he was promoted to Engineer in Charge of Transmission and Distribution, and then to Chief Engineer, in 1928. He has been Assistant to the Vice-President in Charge of Engineering since 1948.

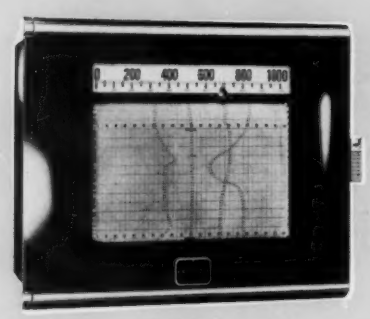
A Registered Professional Engineer in Pennsylvania, Mr Chase is a member of the American Society of Mechanical Engineers as well as the American Institute of Electrical Engineers.

It might be expected that he would be a member of the Edison Electric Institute's Engineering and Operating Division Executive Committee, but it comes as a surprise to find that he is also a member of the Aviation Committee of the Chamber of Commerce of Greater Philadelphia.

A long list of offices marks his career—American Institute of Electrical Engineers (Past Chairman, Philadelphia Section); Edison Electric Institute (Past Chairman, Transmission and Distribution Committee); Association of Edison Illuminating Companies (Past Chairman, Committee on Power Distribution); and Pennsylvania Electric Association (Past President).

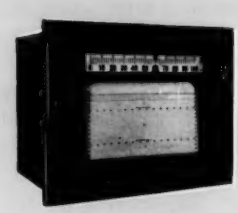
Mr Chase is also an inventor and holds a number of patents. Among his inventions is the alternating-current secondary network system used in the downtown Philadelphia area for thirty years. He also holds a patent for the shielded type of high-voltage cable in general use today, and for switch-locks, mast arms, secondary racks, and automobile signaling. His most recent technical paper published in *Illuminating Engineering* in 1940 was "Directional Flashing for Motor Vehicle Signals."

As a hobby, Mr Chase collects coins with special attention to Confederate currency. The research he has done on this hobby led him to write a book, published under the title, *Confederate Treasury Notes*. The book is known in numismatic circles as "authoritative."



Bristol

General Electric

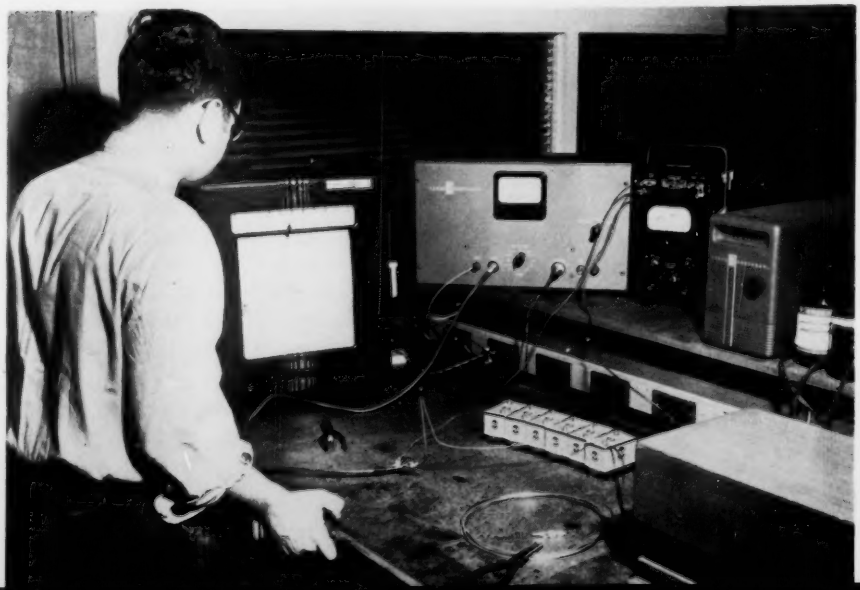


Honeywell

Leeds and Northrup—Ohio Edison

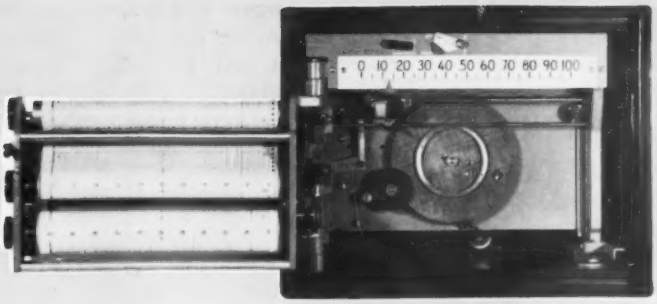
Information recorded by these instruments aids in economical distribution of generated electric power through the load dispatcher's office.

Leeds and Northrup—RCA



A newly designed rubber tube socket is here being tested for insulation leakage, with the aid of preamplifier and recorder.

Weston



Weston

The Latest Instrument Standard

Null-balancing recorders are most recent addition to standardized electrical measuring instruments

by **G. Lupton Broomell**

Mr Broomell is assistant director of engineering, Leeds & Northrup Company, Philadelphia. He was chairman of Subgroup 3 on Automatic Null-Balancing Electrical Measuring Instruments, which was assigned the task of developing a proposed American Standard on this type of instrument. This is a subgroup of Subcommittee 2, Recording Instruments, of ASA Sectional Committee C39 on Electrical Measuring Instruments. Sponsor of the committee is the Electrical Standards Board.

AUTOMATIC null-balancing electrical measuring instruments are used extensively throughout industry and in laboratories to measure a wide variety of physical quantities, properties, or conditions which can be reduced to equivalent electrical signals. The majority of these instruments record the measurement on a strip chart or circular chart; some only indicate.

In many cases accessory equipment is arranged to provide automatic process control from the measurement, to integrate the measured quantity, to retransmit the measurement in analog or digital form, or for a host of other purposes.

Despite the important part these instruments play in laboratory work and in industry, engineers and technicians who employ them or design them have had no formal, nationally recognized criteria by which to judge the qualifications of the instruments themselves.

Now, a new American Standard for Automatic Null-Balancing Electrical Measuring Instruments, C39.4-1956, provides definitions, general requirements, and a number of detailed requirements, to assist the designer and user alike. It describes various means by which such instruments are classified, such as exhibiting means, recording means, scale length, type of measuring circuit, and performance ratings.

Similar standards have already been in use for several years, covering deflection instruments and direct-acting recording instruments. The American Standard for Electrical Indicating Instruments, C39.1-1955, was completed in 1949 to cover deflection instruments of the panel and switchboard types and was revised in

1951 to include laboratory types. Subsequently, C39.2-1953, American Standard for Direct-Acting Electrical Recording Instruments (Switchboard and Portable Types), was developed and issued in 1953.

The subcommittee activity which had been responsible for these standards was then turned to the task of drafting a standard to cover the instruments commonly referred to as wide strip chart and large circular chart null-balancing recorders. In C39.1 and C39.2, detailed requirement sheets had been introduced as a means for providing performance specifications useful in evaluating indicating instruments, and it was decided to continue this approach in C39.4. It quickly became evident, however, that the treatment of instruments under C39.4 must differ in several respects.

Inasmuch as automatic null-balancing electrical measuring instruments are commonly used with industrial processes, it has not been considered feasible to specify basic performance characteristics at a single combination of temperature and humidity. The concept of "rated operating conditions" was adopted, therefore, to describe a range in conditions such as temperature, humidity, line voltage and frequency, and "pick-up." The performance ratings are prescribed to apply throughout the range of rated operating conditions. Also introduced were "extreme operating conditions" which denote the limits of similar conditions within which operation is permissible. The detailed requirements set forth a number of "influences" on performance characteristics which may result from operation at these extreme conditions.

In the application of automatic null-balancing instruments, the dynamic characteristics are frequently of considerable importance. By including definitions and test procedures for step response, frequency response, and ramp response, the standard provides means for determining conformance with performance ratings, but avoids a complete mathematical analysis of these characteristics.

The variety of automatic null-balancing electrical measuring instruments which have been or can be manufactured is almost unlimited. To provide a reasonable basis for classification, the C39.4 standard is limited to the more conventional instruments of the d-c potentiometer, d-c and a-c bridge, and a-c potential balance types. Although instruments within the scope of the standard may be suitable for operating various auxiliary devices, such as controllers, the general and detailed requirements are restricted to the indicating and recording functions. Care is exercised to avoid standardization which might inhibit the efforts of the designer to introduce improvements or proprietary advantages so long as they conform with the minimum requirements for performance and quality of construction.

It became apparent that much confusion existed in terminology associated with this class of instruments and the standard, therefore, includes a comprehensive section on definitions. Every attempt has been made to avoid ambiguity and several new terms are introduced where conflict seemed to exist between older terms. At the same time, the committee has endeavored to select terms as consistent as practicable with the American Standard C42-1941, Definitions of Electrical Terms.

In order to determine compliance of a particular instrument with the requirements set forth in the standard, it is necessary to conduct a number of tests. In order that all users of the standard may perform such tests in a uniform manner, two sections of the standard are devoted to test conditions and detailed test procedures. Members of the subcommittee followed these conditions and procedures in performing numerous tests during the process of determining the values for the detailed requirements.

It is believed that the new standard will eliminate much ambiguity and misunderstanding as well as provide, on a national basis, means by which to judge the qualifications of individual instruments. However, the scope is very broad and much of the material is completely new. It is hoped that those using the standard will refer their comments, their criticisms and their difficulties to ASA since it is expected the subcommittee will be maintained to consider the desirability and advisability of making revisions from time to time.

The writer wishes to take this opportunity to express his appreciation of the work of the subcommittee members and the ASA staff, and for the support provided by H. C. Koenig, chairman of Sectional Committee C39. Throughout the project a great deal of patience and tolerance was shown by each member, with the entire group working to achieve a result which would be as generally useful as possible.

A section from the tabulated requirements in American Standard C39.4-1956.

Tabulated Detailed Requirement Sheets for Strip-Chart, Round-Chart, and Multiple-Point Strip-Chart Recorders

Item	Units	Requirements			Reference
1. Exhibiting means		Strip chart	Round chart	Strip chart	3.1
2. Recording means		Single marking device	Single marking device	Printing	3.2
3. Number of measurands		1	1	As specified	3.3, 4.18
4. Scale length					
(a) Chart scale length (min)	Inches	9.5	3.5	9.5	3.4(1), 4.30.1
(b) Indicating scale length (min)	Inches	9.5	28	9.5	3.4(2), 4.30.2
5. Type of measuring circuit — strip-chart, round-chart, and multiple-point strip-chart recorders		D-C Potentiometer	D-C Bridge (for temperature measurement)	A-C Bridge (for temperature measurement)	
6. Electrical span (min)	Millivolts	5	5 (see note 1)	50 (see note 1)	3.6, 4.31.2

Philip H. Chase

Hendley Blackmon

New Officers for ESB

THE Electrical Standards Board of the American Standards Association has elected a new chairman for the first time in its history. Philip H. Chase succeeds the late Charles Rufus Harte, who until his death late last year had been chairman of the Board and its predecessor committee since their organization. Mr Chase is assistant to the vice-president in charge of engineering, Philadelphia Electric Company, and has been a member of the Board since 1935.

Also new as an officer of the Board is Hendley Blackmon, elected vice-chairman heading the Board's Power Division. Mr Blackmon is engineering manager of association activities, Westinghouse Electric Corporation.

Virgil Graham, Radio-Electronics-Television Manufacturers Association, was re-elected vice-chairman, heading the Communications and Electronics Division.

Closely associated with the work of the Electrical Standards Board is the United States National Committee of the International Electrotechnical Commission. The USNC has just re-elected R. C. Sogge, General Electric Company, as its president and Virgil Graham, RETMA, as one of its two vice-presidents.

USNC also has two new officers. Hendley Blackmon, newly elected vice-chairman of the Electrical Standards Board, has been elected USNC vice-president. David Hoffman, head of the American Standards Association's electrical engineering staff, has been appointed USNC secretary.

Philip Chase is well known to a wide circle of friends in electrical engineering throughout the entire world, partly as a result of his leadership in making the fiftieth anniversary of the International Electrotechnical Commission in Philadelphia, 1954, an outstanding success. He has held his present position with the Philadelphia Electric Company since 1948, and has worked for the company since 1921.

He has been a representative of the Electric Light and Power Group on the Electrical Standards Board since 1935, and vice-chairman of the Board since 1951. As a member of the ESB he has also been active in the work of the United States National Committee of the International Electrotechnical Commission. (Further information concerning Mr Chase is given in this month's "Personality of the Month," page 31.)

Mr Blackmon has an outstanding record both in safety and in electrical engineering. A graduate of the Georgia School of Technology, he started his career in the Westinghouse Graduate Student Course, and moved from engineering to public relations. He left Westinghouse in 1945 to become Electrical Editor of *Product Engineering*, and later managing editor of McGraw-Hill's *Electrical World*. He returned to Westinghouse in 1949, however, and was appointed Engineering Manager in 1951. He was awarded the Westinghouse Order of Merit in 1942. This is the company's highest honor, bestowed by the company on employees for outstanding work.

He is active in many societies and associations. A Fellow of the American Institute of Electrical Engineers, he has been chairman of the AIEE Safety Committee. He has also been chairman of the Executive Committee of the American Society of Mechanical Engineers' Safety Division, a member of the ASME Codes and Standards Committee, and chairman of NEMA's Codes and Standards Committee, of which he has been a member since 1950.

Mr Blackmon was re-elected vice-chairman of ASA's Safety Standards Board this year, and is an alternate representative of the National Electrical Manufacturers Association on ASA's Standards Council and Mechanical Standards Board. He is a working member of a number of sectional committees.

Mr Hoffman, newly appointed secretary of the USNC, and secretary of the Electrical Standards Board, has been on the staff of the American Standards Association since 1949, with a break of two years for service in the U.S. Navy. He became head of the electrical engineering department of ASA in 1954, and assistant secretary of the USNC in the same year. He was graduated from Yale University in 1945 with a degree of B.E. (E.E.). Mr Hoffman was admitted to the New York State Bar in 1955, after having graduated with an LL.B. degree from St John's University School of Law.

Members of the Executive Committee of the Electrical Standards Board, in addition to the officers, are: M. M. Brandon, Underwriters' Laboratories, representing the Fire Protection Group; L. G. Cumming, Technical Secretary, Institute of Radio Engineers; J. H. Foote, Commonwealth Associates, representing the American Society for Testing Materials; E. B. Paxton, Engineering Standards Service, General Electric Company, representing the American Institute of Electrical Engineers; and E. F. Seaman, Head Engineer, Standardization Planning, Department of the Navy.

OBJECTIVES AND POLICY of the

Official statement approved by ASA's

General Background

The need for an orderly procedure to correlate the development of standards having a national status led to the formation of the American Engineering Standards Committee, in 1918, by five engineering societies. Almost immediately, the organization was enlarged to admit other societies and trade associations which had a common interest in an effective, integrated national standardization program. The early work of the committee was confined for the greater part to the field of engineering or industrial standards. Substantial progress during the formative years was made while overcoming numerous obstacles associated with working out satisfactory administrative procedures to serve the participating groups and organizations. The original American Engineering Standards Committee became the American Standards Association (ASA) in 1928.

From the very beginning of operations, user groups participated in the formulation and approval of standards processed through the facilities of ASA and it was recognized that the Association would probably experience major future expansion in the field of consumer goods standards. In 1945, a modification of the ASA Constitution dropped the limiting phrase, "in those fields in which engineering methods apply." This revision served to recognize officially the growing importance of the national consumer goods standardization program.

In 1946, the ASA Board of Directors voted to extend the work of the Association still further into the field of trade standards. These enlarged responsibilities dictated not only a substantial increase in the ASA budget, but a corresponding broadening of leadership from private industry to implement new or greatly expanded activities in consumer goods standards. Subsequently, many of these standards have been prepared under ASA procedure. Many more trade standards have been promulgated by the Department of Commerce, some of them being approved as American Standard through the ASA clearinghouse facilities.

Along with the more recent growth of ASA work on consumer goods standards, the industrial or engineering standards activity has continued to expand at a phenomenal rate. Major national industries such as aircraft, automotive, and electronics have become a significant part of the national economy during the comparatively short lifespan of ASA and its predecessor committee. The result has been an unprecedented demand for new or changed standards for application to those industrial procedures of a highly repetitive nature.

To this date, ASA retains its status as a private enterprise service agency operating on the principle of voluntary standards. A key feature of the ASA procedure has always been to avoid creating large internal organizations to undertake specific projects when suitable facilities already exist within some more specialized national group. ASA's functions as a clearinghouse and coordinating agency assure the most efficient utilization of the specialized knowledge, skills, and experience of these

THE American Standards Association now lists a total of 1687 approved American Standards. Projects are under way in many different fields, including most branches of engineering and science, consumer goods, and safety. Standards are largely developed through "sectional committees," with members drawn from all groups that have a substantial concern with the work. Committees are "sponsored" by responsible national associations, societies, or government bodies. Sponsor organizations have responsibility for keeping the project work moving and for giving all groups concerned an opportunity to take part in development of the standard.

Standards developed through their own procedures by associations, societies, and government bodies may also be submitted as Existing Standards for ASA approval. ASA's contribution in this case is certification that Existing Standards have in fact received nationwide acceptance by all substantially concerned, attesting that they are valid and reliable nationally recognized standards. Many associations and technical societies make use of this method to have their standards certified as "American Standard." Among these are the American Society for Testing Materials, Underwriters' Laboratories, and the American Institute of Electrical Engineers.

In a simple case, an American Standard may be developed through the "General Acceptance Method." In this case, a general conference of all groups with a substantial interest in the subject is called. Frequently a draft standard is already in existence for presentation to the General Conference, or the Conference may name a subcommittee to develop the draft. It is then voted on by the conference as a whole.

In all these methods, the function of the American Standards Association is the same—to assure that all groups substantially concerned have an opportunity to take part in development of the standard or to express an opinion on its acceptability, and to certify that it qualifies as a truly "American Standard."

AMERICAN STANDARDS ASSOCIATION

Board of Directors, October 17, 1956

associated groups. ASA has taken the lead in the correlation of American Standards with international standardization activities; here also with the qualified guidance of established agencies within the United States.

The continuing support of ASA on the part of manufacturers, technicians, consumers, distributors, insurance underwriters, and many others is a tribute to the unique contribution this Association has made to further our economic and social development.

Declaration of Objectives and Policy

The objectives of the American Standards Association are clearly stated in its Constitution:

To provide systematic means by which organizations concerned with standardization work may cooperate in establishing American Standards, to the end that duplication of work and the promulgation of conflicting standards may be avoided.

To stimulate the work of existing committees and other organizations competent to formulate standards suitable for approval as American Standards, and to bring about the establishment of committees or organizations for this purpose where they do not already exist, but not to formulate standards.

To serve as a clearinghouse for information on standardization work in the United States and foreign countries.

To further the standardization movement as a means of advancing national economy and to promote a knowledge of and the use of approved standards.

To act as the authoritative American channel in international cooperation in standardization work, except in those fields adequately provided for by existing international organizations.

It shall be the policy of the ASA Board of Directors to implement the foregoing constitutional objectives to the fullest possible extent.

The Board of Directors shall continue to work to improve, simplify, and make even more efficient the ASA standards coordination and clearinghouse services as they apply to domestic and international standardization projects.

The Board of Directors shall continue to encourage other agencies to establish the necessary machinery to do creative standardization. ASA shall not become actively engaged in the actual preparation of standards except in those cases where the scope of the project is clearly beyond that of any single agency, or where no existing group has the facilities, manpower, or other resources required to sustain a prolonged standardization effort.

The Board of Directors shall make use of every means of communication at its disposal in furthering the general interest in and knowledge of standards and their effect on the national economy. ASA will assist other agencies in their efforts to publicize standardization activities, or disseminate information to users of their standards.

Finally, the Board of Directors shall make every effort to guide the affairs of ASA in such a manner as to assure the promulgation of those American Standards which will be of optimum benefit to the Member-Bodies, the users, and the general public.

All projects of the American Standards Association are supervised by standards boards, which are responsible for reviewing the procedures used in developing the standard, but not for reviewing the technical content of the standard itself. There are 14 standards boards—the Acoustical Standards Board; Construction Standards Board; Consumer Goods Standards Board; Electrical Standards Board; Graphic Standards Board; Highway Traffic Standards Board; Materials and Testing Standards Board; Mechanical Standards Board; Mining Standards Board; Miscellaneous Standards Board; Nuclear Standards Board; Photographic Standards Board; Safety Standards Board; and Chemical Industry Advisory Board.

Standards Boards report their findings and their work to the Standards Council, and its Board of Review. The Council represents all of the 67 Member-Bodies of ASA. Member-Bodies are associations and technical societies. Most recent individual Member-Bodies are the National Fire Protection Association and the Underwriters' Laboratories which formerly participated as part of the Fire Protection Group but now are members in their own right. Fifty-two Associate Members also take part in discussions of the Standards Council but have no right to vote. The Slide Fastener Institute and the National Association of Photographic Manufacturers are the most recent Associate Members. Approximately 2300 company members support the work of the American Standards Association and make use of American Standards, the ASA Company Member Conference, the ASA Library, the magazine and other publications, and the National Conference on Standards.

This year, for the first time, the American Standards Association has scheduled a special three-day meeting for Member-Bodies, Standards Boards, and Standards Council. Here they will have an opportunity to survey the activities of the Association and to exchange ideas on its operation. The meeting will be held April 24-26, at the Hotel Biltmore, New York.

International Textile Work Shows Fast Progress

by **Wm. D. Appel**

Mr Appel is chief, Textile Section, Organic and Fibrous Materials Division, National Bureau of Standards, and chairman of ASA Committee L23, the USA committee on work with the International Organization for Standardization Technical Committee 38. Mr Appel was leader of the American delegation to the meeting of ISO/TC38 at Southport, England, May 14-18, 1956. He presented this report of the committee's work at a special meeting sponsored by the American Association of Textile Chemists and Colorists, the American Society for Testing Materials, and the American Standards Association, at the Hotel Warwick, New York, October 18, 1956.

Other members of the U.S. delegation reported on specific phases of the committee's work. George S. Buck, Jr, Technical Service Director, National Cotton Council of America, Washington, D.C., reported on cotton fiber testing methods; Professor B. L. Whittier, chairman of ASTM Committee D-13, described the relationship of the American Standards Association, the American Society for Testing Materials, and the International Organization for Standardization; and Dr A.G. Scroggie, manager of the Characterization Laboratory, E.I. du Pont de Nemours & Company, reported actions on yarn testing methods and yarn numbering units.

ISO Technical Committee 38 on Textiles can move fast when necessary, and did in acting on cotton fiber tests. It is evident that it will set up practical methods as well as research tools, as it has for cotton fiber tests and colorfastness tests. It will give leadership in providing guides for eventual elimination of practices that are no longer needed; for example, the many yarn count systems.

The committee's meetings have stimulated critical review of standard methods in member countries. As a result, methods are being revised.

The work is difficult and tends to be slow, but real progress is being made toward unification of methods. An example is the second edition of the Colour Index being brought out jointly by the American Association of Textile Chemists and Colorists and the British Society of Dyers and Colourists. This five-volume work has had to provide three columns of data on fastness properties of dyes and dyed materials because the test methods in the USA, UK, and the continental European countries are different. The cost and effort of collecting and publishing three sets of data for several thousand dyestuffs will be unnecessary when a single set of ISO methods is available.

Standardized testing methods, terminology, and procedures are today essential tools in science, technology, manufacturing, and trade. They are essential in the modern textile industry. They provide a common understanding in everyday transactions as well as in the technical literature. Unlike specifications for materials, they impose no restrictions on producers or users. Rather, they enable the producer to improve his products, control his processes, and reduce costs. They enable the user to select products to meet his needs. They simplify and clarify business and promote confidence. All branches of the American textile industry are concerned in some degree with international trade and have something to gain from the work of ISO/TC38, provided they take an active part in it. They have much to lose if they do not.

Technical Committee 38 held five meetings in 1956. A plenary meeting was held in Southport, England, in May. Subcommittees on Fiber Testing and Yarn Testing met at the same time. Subcommittees on Colorfastness and on Shrinkage of Fabrics in Washing met in New York in September.

The Southport meeting was attended by more than 100 delegates from 21 countries and by representatives of four international textile associations; namely, the International Bureau for the Standardization of Rayon and Synthetic Fibers (BISFA), International Linen and Hemp Federation, International Silk Association, and International Wool Textile Organization. The American delegation had 16 members, including an outstanding group of cotton fiber technologists. In order to distribute the work among the members and provide spokesmen for the various subjects, each delegate had responsibility for one or more subjects. Each deserves great credit for his services.

The meeting was organized by the British Standards Institution as Secretariat for TC38. W. A. Bayes, well-known textile technologist and member of the Executive Committee of BSI, presided.

Stated simply, the purpose of the meetings was to agree on methods of test and procedures that could be recommended for world-wide adoption.

Part of the work is carried on in subcommittees, each with its secretariat. The rest is carried on directly under the Secretariat of TC38. Only a brief review of the subjects considered can be given here. The official report and all of the many documents related to the work of TC38 may be consulted at American Standards Association headquarters in New York.

Report of Work Carried on in Subcommittees

Fiber Testing—AFNOR (France) holds the secretariat. This subcommittee met in Southport following an urgent request by the USA that cotton fiber tests be established promptly to meet a need of international trade. George S. Buck, Jr, Technical Service Director, National Cotton Council of America, Washington, D. C., organized the cotton fiber group on the American delegation and was the principal spokesman on this subject. He and his group were successful in obtaining agreement on three key cotton fiber test methods. These methods and four other fiber tests were accepted by TC38 as "Draft ISO Recommendation." They cover: Sampling of cotton fibers; determination of Micronaire value; determination of strength of cotton fibers; determination of wool fiber diameter; determination of fiber length; determination of titre (linear density) of fibers; and determination of breaking load and elongation at break of fibers.

In order to make such rapid progress, it was necessary to convince the delegates from other countries that ISO can best serve international trade in textiles by establishing practical standard tests and doing so promptly on the basis of existing knowledge and practices rather than waiting for scientific perfection. Improvement of the methods then can proceed as rapidly as experience and advances in textile science permit.

Yarn Testing—The ASA (USA) holds the secretariat, with the American Society for Testing Materials supplying the leadership. The subcommittee held its third meeting in Southport, England, on May 14 and 17, 1956. George S. Buck, Jr, of the American delegation served as chairman.

Dr Arthur G. Scroggie, who has been the principal spokesman for America on this subject in all previous meetings, again had this responsibility. A major share of the credit for the work accomplished is due Dr Scroggie. The subcommittee approved methods for evaluating linear density, breaking load and elongation, and twist in yarns, and these methods were accepted by TC38 as Draft ISO Recommendations.

The most dramatic occasion during the Southport meeting came when the USA delegation announced that it would support the "tex" system of yarn numbering. The 21 countries represented at the meeting and three international associations then decided unanimously to recommend this single, universal system for expressing linear density of all kinds of fibers, yarns, and threads.

The recognition of this system by all branches of the textile industry and gradual introduction of it in place of the many systems now used will be of far-reaching value to the industry and its customers. This accomplishment shows that ISO/TC38 will furnish leadership and guides for eventual elimination of practices that have grown up in the industry over many years but that are no longer necessary or desirable.

Reduction of the Number of Cloth Widths—CSN (Czechoslovakia) holds the secretariat. It is considering the preparation of a list of preferred widths as a guide toward reduction in the number of cloth widths regularly made, with resulting simplification and economies. The list would also be a guide to machine manufacturers.

Reduction of the Number of Yarn Counts—HCNN (The Netherlands) holds the secretariat. It is engaged in a survey of the various branches of the industry to find out what yarn counts are regularly made. The ultimate object of the work is to provide a list of preferred yarn sizes for regular production.

Ropes and Cordage—AFNOR (France) holds the secretariat, but this subcommittee did not meet at Southport, as it had met in 1955. A working group is developing a program for the work.

Colorfastness Tests—The secretariat for this subcommittee is held jointly by the ASA (USA) and BSI (UK) with the AATCC and British Society of Dyers and Colourists supplying leadership. The subcommittee met in New York on September 5, 6, and 7. Twenty-two delegates from eight countries, not counting the USA, were present. Four Russian delegates arrived too late to take part. The American delegation of 37 was led by Leonard S. Little, who represents AATCC and the Synthetic-Organic Chemical Manufacturers Association on the USA committee for ISO/TC38. Charles A. Sylvester, E. I. du Pont de Nemours & Company, Wilmington, Delaware, was the chief spokesman.

The subcommittee has to its credit 24 colorfastness test methods that have been accepted by TC38 and that are to be issued as ISO Recommendations. They include a statement of general principles, methods for assessing change in color and staining in the tests with standard grey scales, and tests for colorfastness to a number of agents including acid and alkali spotting, bleaching, carbonizing, mercerizing, metals in the dyebath, hot pressing, rubbing, hand-washing, water, and daylight. Provision is made for the use of the AATCC crockmeter and perspirometer where appropriate.

The New York meeting accepted additional methods as follows: colorfastness to cross-dyeing of wool, decatizing, degumming, acid planking, mild acid milling, alkaline milling, mild and severe bleaching with sodium chlorite. Further consideration will be given to a number of other proposed colorfastness tests.

The difficult subjects of colorfastness to light and colorfastness to washing were discussed at length in working groups and in the subcommittee as a whole, but it was not possible to reconcile the views of the USA with those of the other countries. To meet this situation, it was agreed that two tests for each type of light (day-

William D. Appel will receive the Harold DeWitt Smith Memorial Medal from ASTM Committee D-13 on Textile Materials during the committee's spring meeting, March 19 to 22. The committee's selection of Mr Appel as the award recipient was announced by the American Society for Testing Materials. The medal is endowed by Fabric Research Laboratories, Inc, and is awarded for outstanding achievement in research on fibers and their utilization.

light and artificial light) and each condition of laundering would be taken under consideration.

Shrinkage of Fabrics in Washing—The secretariat is held by the ASA (USA), with AATCC supplying leadership. The subcommittee met in New York, September 7 and 8. Fifteen delegates from eight countries, not counting the USA, were present. The International Association of Textile Dyeing was represented by an observer. Four Russian delegates arrived too late to take part. The American delegation of 19 delegates was led by Leonard S. Little. Harry C. Donaldson, Jr, Cluett-Peabody & Company, Troy, N. Y., was the spokesman just as he had been at the previous meeting in Scarborough, England, in 1954.

A method for testing the dimensional changes of cotton fabrics in laundering had been agreed upon at Scarborough except for the time of washing. It is essentially the method that has been standard in the USA for 30 years. In order to provide an experimental basis for selecting the time of washing, interlaboratory studies have been in progress. They are designed to show not only the effect on the results of differences in time of washing, but also the effects of amount of fabric tested at one time, and the reproducibility of the test.

Twenty-two laboratories in 17 countries are taking part. Preliminary results of these studies were examined by the subcommittee at its New York meeting. Agreement on the time of washing could not be reached at this meeting but it was decided to issue two draft proposals for consideration by the member countries, one calling for a 60-minute test and the other an 80-minute test (washing time 40 minutes and 60 minutes, respectively).

Work Carried On Under the General Secretariat

Commercial Weights—At Southport, a working group discussed the subject of commercial weights, T.L.W. Bailey, Jr, Cotton Technologist, Foreign Agricultural Service, U.S. Department of Agriculture, represented the USA. The group selected four bases for expressing commercial weights. The procedures are to be sent to the industry groups with explanations of the terms "commercial weight," "commercial regain," and "commercial allowance." Comments are to be solicited.

Measurement of Cloth—Professor Whittier represented the USA on a working group that discussed methods for measurement of cloth length, width, and weight. Further revised drafts are to be written to meet the comments received.

Cloth Strength Testing—Professor Whittier, School of Textiles, North Carolina State College, represented the USA on a working group which decided to prepare new drafts of the methods under consideration. They are: (1) Constant rate of loading with 60 seconds to break; (2) Constant rate of traverse with 4 inches per minute; (3) Constant rate of specimen extension with rate of 2 inches per minute; (4) Grab test methods with each of the three types of loading. These methods are to be studied for reliability in interlaboratory tests.

Analysis of Fiber Mixtures—The subject of analysis of fiber mixtures was referred to a working group of delegates from 14 countries. T.L.W. Bailey, Jr, served for the USA delegation. The working group is planning to hold meetings in Paris during 1957 and in England later in the year. The working group agreed to develop quantitative methods of analysis for fiber mixtures starting with binary mixtures. It considered wool blends to be of greatest interest. It will study the recent methods of The Textile Institute for secondary cellulose acetate in mixtures with other fibers and for wool in mixtures with non-protein fibers.

Definitions and Nomenclature—The definitions of textile-chemical terms published by The Textile Institute had been reviewed by ASTM and the AATCC. Written comments and suggestions from the latter were received too late for formal presentation to TC38, but a copy was handed to the secretariat at the meeting and will be taken into consideration.

Waterproofness Tests—The UK proposal to form a new subcommittee on waterproofness tests was considered by a working group that decided further study is desirable before a subcommittee is appointed. Eleven countries including the USA were members of the working group. It was agreed that several tests will be necessary.

Drafting of Textile Standards—Instructions for drafting the ISO textile methods were agreed upon for the guidance of TC38. These instructions should be of interest to organizations in the USA that write textile test methods.

Future Program

Several new subjects were selected for future consideration, including cotton fiber tests and waterproofness, already mentioned, and measurement of quality of bast fibers, measurement of crease-resistance of cloth, measurement of chemical degradation of cellulosic textiles by means of solutions of cuprammonium and cupraethylenediamine. It was decided not to take up abrasion tests.

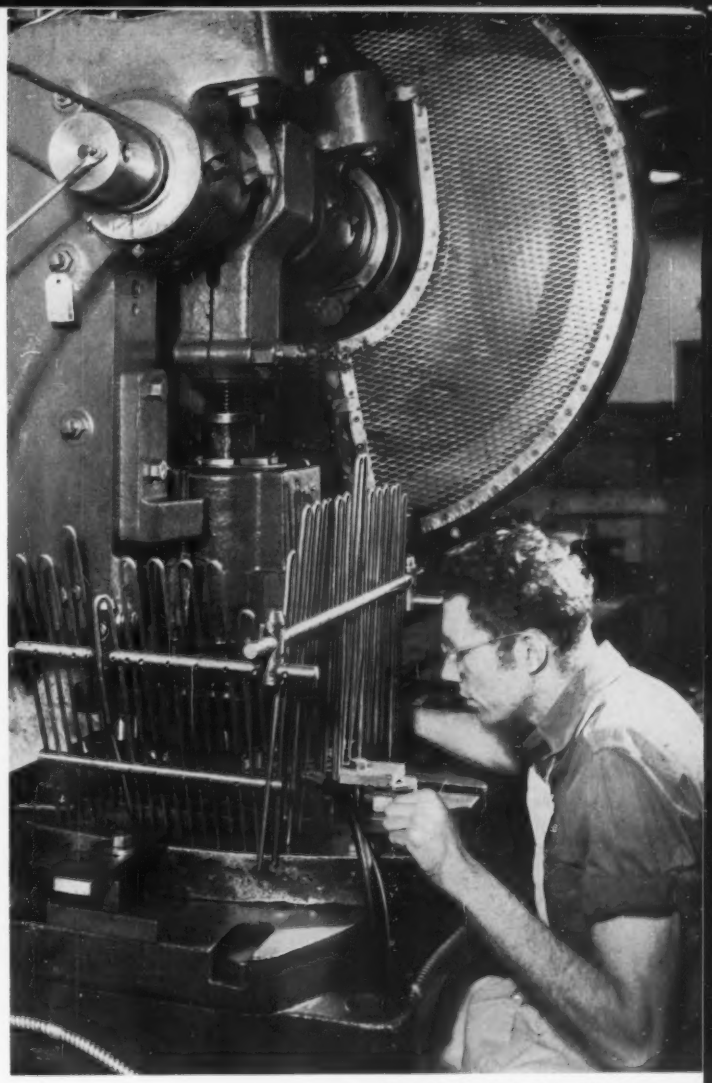
The next meeting of TC38 will probably be held in about two years.

MACHINE GUARDING—

SAFETY STANDARDS

by **S. F. Spence**

Mr Spence is Director of Safety and Loss-Prevention of the American Cyanamid Company and is chairman of the Safety Standards Board, American Standards Association. This paper was delivered at a Symposium on Machine Guarding at the National Safety Congress in Chicago, October 26, 1956.



This punch press used for working on metal machine parts is completely enclosed. It would be difficult as breaking into jail for the operator of this machine to get his hand under its ram while it is in operation.

State of New York, Dept. of Labor

EXPERIENCE tells us that the broader the subject of a standard may be, the more it becomes necessary to treat it on the basis of a set of guiding principles, rather than with firm "standards" or "specifications." The American Standards that apply to machine guarding, therefore, are largely in the form of performance requirements. Generally, they achieve increasing degrees of fineness in their stipulations as they move from the machinery items which are of general-purpose type to those machines which are, in themselves, quite standardized in character and design.

As an example, the American Standard Safety Code for Mechanical Power Transmission Apparatus covers a great variety of types of transmission items; thus, with the exception of certain fixed stipulations, such as the specifications covering minimum requirements of materials approved for fabrication of the machinery guards themselves, the code is largely a performance code. In this connection, to that part of the code covering the guarding of the driving points of friction drives, there are so many types of friction drives—shapes, sizes, and designs—that the code rule covering the guarding of the driving points of friction drives must be presented through the expression of principles such as this: "The driving point of all friction drives when exposed to contact shall be guarded." Principal details of the permissible methods by which this guarding can be effected, then, are covered by other rules in this code.

At the other end of the spectrum of machinery items covered by American Standards for guarding, we find the safety code on guarding abrasive wheels. Because of the relative uniformity in abrasive wheel design it is practical, in this code, to approach the area where fixed standards or specifications can be stated. The latest revision, titled "The American Standard Safety Code for the Use, Care, and Protection of Abrasive Wheels, B7.1-1956," was approved recently by ASA. The format of this standard, for example, departs significantly from that of the usual American Standard. It is developed and laid out on the basis of two columns on each page. The left column is the text of the code, the right column is given to expianatory information (not a part of the

American Standard), explanatory photographs, and sketches. This code revision has been carefully developed so that it can be of maximum practical assistance to the user.

In the over-all picture of machine-guarding standards, the following types of standards stand out:

Standards and codes developed by representatives of all who have an interest in the project, through such an organization as the American Standards Association.

Standards developed by the users of equipment.

Standards developed by the manufacturers of equipment—either individual manufacturers, or associations of manufacturers.

The procedures involved in the development of an American Standard are truly democratic. Every group substantially concerned with a standard is guaranteed the right to participate in deciding what the provisions of the standard shall be so that the standard shall represent a predominating viewpoint. Decisions are made not by a simple majority vote, but rather by the consensus principle. Every effort is made to thrash matters out so thoroughly that a decision is reached which is unanimous or nearly so. Minorities are protected, special interests are tempered with public interest, and national acceptance is obtained for American Standards. American Standards are subject to periodic review. They are reaffirmed or revised to meet changing economic conditions and technological progress.

American Standards are prepared according to any one of four methods. The principal one, and that which is the most pertinent to this discussion, is the sectional committee method.

The sectional committee method consists in the formation, at the beginning of a project, of a committee to develop one or more standards under an assigned scope. The committee is composed of representatives accredited for the purpose by the various organized groups concerned with the project, and, in addition, specially qualified individuals as members-at-large when desirable. The committee functions under the support, direction, or endorsement, of one or more responsible bodies having a fundamental interest in, and knowledge of, the project. These responsible bodies are called "sponsors." The sectional committee method is the method most generally employed in the preparation of American Standard Safety Codes, and is used in all cases where, in the opinion of ASA's Standards Council, the standard is intended to be used as mandatory rules of regulatory bodies having police powers.

Approval of the personnel of sectional committees is based upon the following:

1. That the membership is competent and authoritative in its field.
2. That the membership is adequately representative of those substantially concerned with the proposed standard or standards, and that the individual members officially represent the bodies who have appointed them.
3. That an adequate balance exists between the general classifications of members.

The members of sectional committees dealing with safety codes are in general classified as follows:

1. Manufacturers of the equipment
2. Employers (purchasers, owners of the equipment)
3. Employees
4. Governmental bodies having regulatory power or influence over the field in question.
5. Independent specialists, such as representatives of technical societies, consulting experts with no exclusive business affiliation, and educators.
6. Insurance representatives.

Not more than one-third of the membership of a safety code sectional committee is permitted to be from any one classification.

Upon the completion by the sectional committee of a new code, or a code revision, it is subjected to final review by all committee members, and to vote by letter ballot.

When the Association receives from the sponsor the new, approved code draft reflecting a true consensus, and having the approval of the sponsor, the members of the Safety Standards Board are informed. The members of the Board then vote by letter ballot as to whether the code shall be approved as American Standard. In contemplating such approval, the members of the Safety Standards Board again consider the following questions:

1. Is the membership competent and authoritative in its field?
2. Is the membership adequately representative of those substantially concerned with the proposed standard, and do the individual members officially represent the organizations appointing them?
3. Does an adequate balance exist between the general classifications of members as required in American Standards Association procedure?
4. Does the exhibit show that the sectional committee has reached a consensus in favor of the proposed standard?
5. Was the proposed standard duly approved by the sponsor?

Having been voted approval by the members of the Safety Standards Board, the proposed standard is submitted to the American Standards Association's Standards Council or its Board of Review for final determination as to whether it will be issued as an American Standard. If approved, it is then printed and published.

In the discussion to this point, an attempt has been made to provide a brief account of the methods by which American Safety Standards are conceived and promulgated. Great diligence is observed in selection of scope, in the acceptance of sponsors, in the determination of committee membership to provide a full and true representation of those having concern with the project, in the writing of the code, and in assurance that there is a genuine consensus in favor of the acceptance of the code.

There are more than 160 American Safety Standards.

Some of those which have particular application to mechanical safeguarding are:

American Standard Safety Code for Power Presses and Foot and Hand Presses, B11.1-1948
American Standard Safety Code for Mills and Calenders in the Rubber Industry, B28.1-1949
American Standard Safety Code for Laundering Machinery and Operations, Z8-1941
American Standard Safety Code for the Use, Care, and Protection of Abrasive Wheels, B7.1-1956
American Standard Safety Code for Mechanical Power Transmission Apparatus, B15.1-1953
American Standard Safety Code for Conveyors, Cable Ways, and Related Equipment, B20.1-1947
American Standard Safety Code for Forging and Hot Metal Stamping, B24.1-1952
American Standard Safety Code for Woodworking Machinery, O1.1-1954
American Standard Textile Safety Code, L1.1-1956

There is another related code, American Standard Safety Color Code for Marking Physical Hazards and the Identification of Certain Equipment, Z53.1-1953.

Because of the broad experience and thinking which are employed in the development of American Standard Safety Codes, it is the author's opinion that they provide the firmest and most reliable foundation for the preparation of machine safety standards and specifications by users and manufacturers.

The purposes of machine guards fall into three principal categories:

1. To prevent workmen from direct contact with an injury-producing part of machinery. An example of this might be a circular saw hood guard representing point-of-operation protection; or a drive belt guard, representing machine parts or transmission protection.
2. To protect from injury against that material which is being machined or processed. An example in this category might be a rip saw spreader and kickback dogs, or any of the various applications of chip shields.
3. To protect workmen against failure of the machine itself, usually a rotating part, but not always. An example of this might be an abrasive wheel hood or, again, a drive belt guard.

The user of machinery, in developing his own standards for safeguarding, would proceed in such a way as to accomplish the most efficient over-all protection possible. Therefore, he would look to a combination of these considerations:

1. Those machines which have produced, or could produce, a high frequency or severity of accidents.
2. Quantity of machines of the same type, in the hazardous category.

Just as it is important in the preparation of American Standards that the widest experience be obtained in the development of the code, so it is important that the user obtain full participation in his own organization, in the development of his standards. In developing machine-guarding standards, the Engineering, Maintenance, Operation, Safety, and Methods departments definitely would be represented. Others might well participate, depending on the nature of the particular standard.

The user will do well to investigate thoroughly what others in his industry are doing, so that he will obtain the benefit of the best all-around thinking in developing his standard. In establishing his standards covering machinery and machine guarding, the user also will undoubtedly carefully investigate the various suppliers' products; and as time goes on he will look more and more to those items of machinery which come to him, delivered, with adequate and efficient guarding devices.

In developing a guarding design, and in developing standards covering the entire area of safe machine operation, the user undoubtedly will take into account the following major considerations, where they apply:

Materials of construction—sturdiness, durability, and resistance to corrosion.

Adjustability—this is important where necessary, but only where necessary. Regard should be given to machine lubrication and maintenance needs.

Efficiency of production—This should be given careful consideration. The guarding device should not interfere with feed and take-away efficiency, and operating visibility where such is necessary, but should improve them wherever possible.

The Human Factor—Proper function must depend as little as possible on the human factor.

Local and general illumination
Interlocking devices
Emergency shutdown devices (as for a long conveyor belt)
Number of operators exposed at one point of operation.

Having prepared the draft of his machine protection standard, the user will do well to take another leaf from the American Standards Association's book, and have this proposed standard reviewed and criticized by all those in his organization who will be concerned with it. This produces two effects which are of obvious advantage; it makes for a better standard; and it insures better acceptance of the standard by all of those who will be affected by it, since it gives them an opportunity to have their day in court.

Many machinery manufacturers, over the past several years, have demonstrated a high degree of progressiveness in the consideration they have given to supplying the customer with a machine which is as mechanically safe as it is practical to make it. They have given much attention to visualizing the manner in which operators might become injured while using the equipment, and have improved their designs accordingly. It usually is impossible to make a "fool-proof" machine; nevertheless, manufacturers have gone far in realizing that many machine accidents occur not out of standard operation but because operators do something they are not supposed to be doing. Good machine design from the safety standpoint anticipates the unpredictability of human behavior.

The manufacturer has a particular interest in whether the type of guarding needed is considered in the basic design of the machine. This must be the case wherever possible. It becomes more important as the machines get closer to special-purpose tools. When a guard is later designed for a previously unguarded machine, the entire unit becomes a hybrid, and many times the guarding installed by the user is at best a compromise measure.

Manufacturers and users of machines have a joint responsibility in maintaining communications on the occurence of accidents or near-accidents. The user must realize that usually he has more actual day-to-day operating experience with the machine than does the manufacturer who supplied it. He can therefore be of great assistance to himself, to fellow users, and to the manufacturer, if he will pass along to the manufacturer all data on accident occurrences or accident possibilities which might be helpful in bringing about a machine design improvement. The manufacturer, on the other hand, must realize the wealth of experience developed by the users of his equipment, and should make every effort to learn all he can about accident history associated with any of his machine products.

In summation, the principal benefits of standardized machine guarding seem to be:

1. Standardization of machine guarding is an economically sound practice.
2. The very act of developing a standard requires diligent search, learning, and the uncovering of experience, so that the design of the machine guarding device will be just as good and just as effective as it is reasonably possible to make it.
3. Preparation and development of a machine guarding safety standard invite the participation of all of those who have concern with the project and who will be affected by it. Therefore, it achieves a maximum degree of acceptance.

AIEE HONORS COMFORT ADAMS

Dr Comfort A. Adams, first chairman of the American Engineering Standards Committee (now the American Standards Association), has been honored this year by both the American Institute of Electrical Engineers and the American Welding Society.

Dr Comfort Adams (right) receiving the 1956 Edison Medal from M. S. Coover, president of AIEE.

Dr Adams, professor of engineering, emeritus, Harvard University, was awarded the 1956 Edison Medal during the opening general session of the AIEE's Winter General Meeting, January 25. The Medal is electrical engineering's highest professional award.

Dr Adams is the oldest living past president of AIEE. He was honored for his "pioneering achievements in the development of alternating-current electric machines and in electrical welding; for vision and initiative in the formation of engineering standards organizations and for eminence as an educator and consulting engineer."

The American Welding Society is also honoring Dr Adams, founder of the Society, by renaming its fifth welding show "The Adams National Show." The exposition, the Society's annual meeting, and technical sessions being held in Philadelphia April 9-11 will all honor Dr Adams. The AIEE is joining the Society in sponsoring several of the sessions.

D. C. Smith, chief metallurgist, Harnischfeger Corporation, Milwaukee, Wisconsin, will deliver the Society's annual Adams Lecture.

At the thirty-fifth annual meeting of the American Standards Association, Roger E. Gay, then president of ASA, said: "The standards movement of this country owes an infinite and unrepayable debt of gratitude to Professor Adams for his wise and patient leadership during the founding years of the national movement."

Standards Engineers Society Elects Arlt President

Herbert G. Arlt

Herbert G. Arlt, Bell Telephone Laboratories, Murray Hill, N. J., has been elected president by the Standards Engineers Society, with Franklin E. Powell, Standards Branch, Deputy Chief of Staff (Logistics), Department of the Army, as the Society's new vice-president.

Newly elected secretary of the Society is Jean A. Caffiaux, Radio-Electronics-Television Manufacturers Association.

Charles J. Lawson, Sr, Director of Standards, International Business Machines Corporation, with headquarters in New York, is treasurer.

William E. Aksomitas, Pratt and Whitney Aircraft Company, has been elected director-at-large.

Mr Arlt has been with the Bell Telephone Laboratories since receiving his M.E. degree from Stevens Institute of Technology in 1923. He has been engaged in the engineering and standardization of materials and finishes and is at present Materials Specifications Engineer. He is a member of the American Society for Testing Materials and the American Chemical Society and is a charter member of the Standards Engineers Society.

Mr Powell is a graduate of Syracuse University with an E.E. degree. Except for a few years proprietorship of a small tool and die and general machine shop, he was employed by Underwriters' Laboratories from the time of his graduation until 1943. In that year he was appointed project manager for metal products standards of the Trade Standards Division, National Bureau of Standards. Since 1950 he has been employed in the Standards Branch, General Staff, Department of the Army.

Mr Caffiaux is a graduate of Brooklyn Polytechnic Institute with a B.E.E. degree. After service in the Army during the war as Communications Chief in the Pacific area, he worked at the Sylvania Electric Corporation on printed circuits, automatic assemblies, and on new methods and techniques. He has been with the Radio-Electronics-Television Manufacturers Association since 1953, where he services some 200 technical committees. Mr Caffiaux is a senior member of the Institute of Radio Engineers, and holds a patent on semi-automatic assembly of electrical equipment.

Mr Lawson is an alumnus of Massachusetts Institute of Technology. He joined IBM in 1922 as a sales representative and served in successive posts as Branch Manager, District Manager, and Assistant General Sales Manager before his appointment in 1952 to the newly created position of IBM Director of Standards. There he had responsibility for the establishment and direction of a comprehensive standardization program throughout the IBM engineering and manufacturing organizations.

The Standards Engineers Society now has twelve sections in the United States and Canada, with headquarters in Binghamton, N. Y.; Boston, Mass.; Chicago, Ill.; Detroit, Mich.; Hamilton-Toronto, Ontario; Hartford, Conn.; Los Angeles, Calif.; Montreal; New York; Philadelphia; Pittsburgh, Pa., and Washington, D.C.

The three-day Sixth Annual Meeting of the Standards Engineers Society will be held at the Hotel Commodore, New York, September 23, 24, and 25, 1957.

INTERNATIONAL NEWS . . .

• The American Standards Association has asked Sectional Committee Y14, Drawings and Drafting Practice, for its advice on how ASA, as United States member of the International Organization for Standardization, should vote on four draft ISO Recommendations on drawings. These are:

Engineering Drawing. Principles of Presentation. Draft 140

Engineering Drawing. Dimensioning and Tolerances. General Principles. Draft 141

Engineering Drawing. Dimensioning. Method of Execution. Draft 142

Engineering Drawing. Dimensioning. Arrangement of Dimensions. Draft 143

• The American advisory group on the work of ISO Technical Committee 48, Laboratory Glassware and Related Apparatus, is holding its first meeting March 19 and 20. It plans to consider task group action to develop USA comments on proposed draft ISO Recommendations concerning laboratory thermometers, hydrometers, volumetric glassware, and conical ground glass joints.

E. L. Ruh, Esso Research and Engineering Corporation, representing the American Society for Testing Materials, is chairman of the group. Other organizations represented are the American Hospital Association; American Public Health Association; National Bureau of Standards; Public Health Services; Scientific Apparatus Makers Association; American Oil Chemists Society; and the American Pharmaceutical Manufacturers Association.

• International agreement on acceptable methods of fluid measurement was brought a step nearer at a meeting of Technical Committee

30 of the International Organization for Standardization, July 12-14, 1956. The meeting was held at Munich, Germany.

Howard S. Bean of the National Bureau of Standards headed the United States delegation. Other USA delegates were Dr Andre L. Jorissen, Cornell University; Professor Samuel R. Beitler, Ohio State University; and Roland O. Cox, Lone Star Gas Company, Dallas, Texas. Delegates were present from nine countries in addition to the United States — Belgium, Czechoslovakia, France, Germany, India, Italy, Holland, Great Britain, and Russia. M. Barillon, noted French engineer, presided as chairman of the committee.

The second draft of a proposed international recommendation for measurement of fluid flow by means of orifice plates, nozzles, or Venturi tubes was considered. Certain conclusions were reached, but it was recommended that experimental studies be continued and that Venturi tubes be exchanged between laboratories for further study.

By common consent, the activity of the committee will be carried on in such a way that the results of its work will be practical and capable of application by industry. For the present, the recommendation, when completed, will be limited to essential considerations in connection with primary pressure devices used by industry of various countries; values for their flow coefficients, including tolerances; and specifications for the use of the devices. An appendix will include working examples and computations, and examples on the assessment of errors. All parts of the installation up to but not including the secondary element (the manometer or a similar device) will ultimately be included, however.

A final draft of the proposed recommendations is to be prepared for presentation at the next meeting of the committee, which will be held within the next two or three years. The USA delegation invited the committee to hold its next meeting in New York City.

Subcommittee 1 of ISO/TC 30 is working on rules and methods for the measurement of liquid flow in open channels and waterways. It has recommended that its scope be modified to include methods of measurement of both chemical and radioactive dilution. Three working groups have been set up by the subcommittee to prepare revised drafts of its proposals, which will be considered at a meeting of the subcommittee in the United Kingdom in 1958.

• Plans are now under way for organization of a Venezuelan Standards Association. Groups concerned are already working on standard requirements for handling, transportation, and storage of flammable gases, liquids, and explosives. Reports from Venezuela indicate that among material being used as a basis are some of the codes of the National Fire Protection Association in addition to material already in use in Venezuela and other countries.

• The new American Standard Safety Code for Abrasive Wheels, B7.1-1956, is being considered by ISO Technical Committee 29 on Small Tools and ISO Technical Committee 39 on Machine Tools as the most up-to-date American thinking on requirements for flanges of grinding wheels. Copies of the safety code and of the revised Simplified Practice Recommendation on Grinding Wheels were sent by ASA for consideration at a joint meeting of Working Group 5 of TC 29 and Working Group 3 of TC 39, held October 26 in Paris.

• Following approval by Sectional Committee Y14 of Section 5, Dimensioning and Notes, of the proposed revision of American Standard Drawings and Drafting Practice, Z14.1-1946, it has been decided to hold an American-British-Canadian (ABC) meeting in late spring or early fall of this year.

• On recommendation of the Standards Boards concerned, the American Standards Association is voting for approval of a number of Proposed ISO Recommendations. ASA is registering its vote as the USA Member-Body of the International Organization for Standardization. It is voting for approval of Draft ISO Recommendations:

98, Specification for Seedlac
99, Specification for Shellac
100, Specification for Bleached Lac
115, Methods for Grading Moscovite Mica Blocks, Thins, and Condenser Films

• The next General Assembly of the International Organization for Standardization will be held June 9 to 21, 1958 at Harrogate, Yorkshire (United Kingdom).

The International Electrotechnical Commission will meet in 1958 July 8 to 18, at Stockholm, Sweden.

• The International Organization for Standardization announces approval of the following ISO Recommendations:

Widths of Flat Transmission Belts and Corresponding Pulleys, ISO/R22
Part I, Fundamental Quantities and Units of the MKSA System and Quantities and Units of Space and Time, ISO/R31
Identification of Medical Gas Cylinders, ISO/R32
Emulsion and Sound Record Positions in Camera for 35-mm Sound Motion Picture Film, ISO/R23
Emulsion and Sound Record Positions in Projector for 35-mm Sound Motion Picture Film, ISO/R24
Emulsion Position in Camera for 16-mm Silent Motion Picture Film, ISO/R25
Emulsion Position in Projector for Direct Front Projection of 16-mm Silent Motion Picture Film, ISO/R26
Emulsion and Sound Record Positions in Camera for 16-mm Sound Motion Picture Film, ISO/R27
Emulsion Position in Camera for 8-mm Silent Motion Picture Film, ISO/R28
Emulsion Position in Projector for Direct Front Projection of 8-mm Silent Motion Picture Film, ISO/R29

BOOKS.....

Suggested Practices for Electrical Standardizing Laboratories. *Francis B. Silsbee, National Bureau of Standards Circular 578, August 30, 1956. 9 pages, 15 cents. (Order from Government Printing Office, Washington 25, D. C.)*

Since World War II there has been a sharp increase in the number and scope of standardizing laboratories in the United States. Although the particular situations vary in each laboratory, each one must correlate its reference standards with those of the National Bureau of Standards. These laboratories also have a great many common problems in their work of maintaining and disseminating the units of measurement.

This circular has been prepared to suggest techniques and principles that experience has shown to be useful in such operations. Although it covers explicitly only the field of electrical measurements, many of the principles involved are equally applicable in other kinds of measurement.

For the sake of clarity, the measuring instruments and apparatus used in an industrial organization are divided into five categories. They are: reference standards, working standards, comparison equipment, interlaboratory standards, and shop instruments and measuring apparatus.

1956 Supplements to Book of ASTM Standards. *In seven parts. American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa. $4.00 per part. $28.00 per set.*

Part 1. Ferrous Metals. 440 *pages.* Includes 48 standards.
Part 2. Non-Ferrous Metals. 360 pages. Includes 60 standards.
Part 3. Cement, Concrete, Ceramics, Thermal Insulation, Road Materials, Waterproofing, and Soils. 300 pages. Includes 57 standards.
Part 4. Paint, Naval Stores, Woods, Sandwich Construction, Building Constructions, Fire Tests, Wax Polishes. 230 *pages.* Includes 78 standards. Available January 1957.
Part 5. Fuels, Petroleum, Aromatic Hydrocarbons, Engine Antifreezes. 320 pages. Includes 75 standards. Available January 1957.
Part 6. Rubber, Plastics, Electrical Insulating Materials. 380 pages. Includes 71 standards. Available January 1957.
Part 7. Textiles, Soap, Water, Paper, Adhesives, Shipping Containers, Atmospheric Analysis. 220 pages. Available December 1956

With the 1955 *Book of ASTM Standards*, these supplements give in the latest form all ASTM specifications, tests, and definitions, except for the chemical analysis of metals.

NEMA Manual for Electric House Heating. *NEMA Pub. HE 1-1956. National Electrical Manufacturers Association, 155 East 44th Street, New York 17, N. Y. 25 cents.*

In contrast to the Btu method used in heating manuals for other fuels, this manual is expressed in watts, familiar to the electrical industry. It contains recommendations on amount of insulation for electrically heated homes; a standard method for computing heat loss; a method of selecting the proper size of electric heating equipment; a formula for estimating the annual operating costs for electric heating installations. It also contains area maps and tables so that calculations can be made for any location in the United States. A calculation on a sample home is included illustrating how the manual can be utilized.

The Environmental Problem in the Chemical Industries. *By Kingsley Kay. Reprinted from the International Labour Review, November 1955. International Labour Office, Geneva, Switzerland. 24 pp. 15 cents.*

As explained in the introductory paragraph of this little book, the working environment in the chemical industries is of particular importance from the standpoint of occupational health because of the ever present risk of atmospheric contamination by toxic and other dangerous or harmful substances. With the rapid advances in chemistry that are now being made, the number of such substances is increasing almost daily. Consequently there are always new problems of occupational health to be solved. Although much is already being done, Dr Kay shows that much more could and should be done. He analyzes and gives statistics showing the accident frequency and severity rates in the chemical industries in the United States, Canada, and the United Kingdom, and discusses the problem of occupational disease. He then considers questions involved in preparing the environment for the worker, pre-testing of chemicals whose toxicity is not known, classification and labeling of new chemicals, and the role of research in connection with environmental problems.

Dr Kay, who is with the Occupational Health Division of the Department of National Health and Welfare of Canada, is liaison member for Canada on ASA's Safety Standards Board. He is also liaison member of the Sectional Committee on Allowable Concentrations of Toxic Dusts and Gases, Z37.

Your Guide to NEMA Standards Publications. *December 1956. National Electrical Manufacturers Association, 1955 East 44th Street, New York 17, N. Y. No charge.*

This Guide lists and describes the 150 standards publications for electric apparatus and equipment published by the National Electrical Manufacturers Association, in the following classifications: Appliances; illuminating equipment; signalling and communication equipment; industrial apparatus; building equipment and supplies; insulating materials; insulated wire and cable; generation, transmission, and distribution equipment. A number of NEMA Standards that have been approved as American Standards are included in the list.

International Electrotechnical Vocabulary. Group 07, Electronics. IEC 50 (07). *Second edition.* 1956. *International Electrotechnical Commission, 1, rue de Varembé, Geneva, Switzerland. (Copies available from the American Standards Association, 70 East 45 Street, New York 17, N. Y.)* $4.80

The rapid advance of knowledge concerning the phenomena related to conduction in semi-conductors is one of the important fields included for the first time among the definitions of electronic terms given in this revised section of the international vocabulary. As a result, many terms of a scientific rather than technological nature are included in this portion of the IEC vocabulary. Because of the rapid developments in the field of electronics, IEC reports that this edition is offered as a basis for more mature consideration, and asks that it be examined by scientists with a view to further revision.

As in the case of the other sections of the International Vocabulary, the terms and definitions are given in both English and French, and the terms alone are listed in German, Spanish, Italian, Dutch, Polish, and Swedish, in a separate column alongside each definition.

Sections included cover: General terms; constitution of matter; electrons and matter; radio-active and cosmic radiations; charged particles; luminescence; electrification and excitation of a gas; ionization of a gas; discharge in gases; luminescent discharge; conductors, semi-conductors, insulators; barrier layer; electron emission; thermionic effect; secondary emission; photo-electric effect; general classification of electronic valves or tubes; constituent parts of electronic valves or tubes; working principles of electronic valves or tubes; circuit characteristics of electrodes; magnetrons; electron beam valves or tubes; photo tubes and photocells; gas-filled valves, tubes, and rectifiers; electron optics; semi-conductor devices; and various electronic devices.

Selected ASTM Engineering Materials Standards. 1956. *American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa. 6 x 9. 370 pp. Heavy paper cover.* $4.00 *($1.50 to students of recognized engineering colleges).*

Representative illustrations of nationally accepted standard specifications and the standard test methods which support them are here made available to familiarize college engineering students and teaching staffs with the specifications for materials all engineers must use. Standards were selected on the basis of a poll among engineering educators. They are intended to illustrate the varied nature and approach to standardization problems as well as specific standards closely linked to the work of the course.

Supplementary material is also given, including some information about the legal aspects of standardization.

J. G. Henderson

Max B. Conviser

Chemical Advisory Board Elects Officers

J. G. Henderson, re-elected chairman, and Max B. Conviser, newly elected vice-chairman of the Chemical Industry Advisory Board, have taken office as of January 1, 1957. Mr Henderson, Union Carbide and Chemicals Division, Carbide and Carbon Company, South Charleston, West Virginia, has been chairman of the CIAB since 1951.

Mr Conviser, Chief Chemical Engineer, Tennessee Eastman Company, Division of Eastman Kodak Company, has represented the American Institute of Chemical Engineers on the Board since 1954. A graduate of Columbia University's School of Engineering, he is a member of the Instrument Society of America, and the National Association of Corrosion Engineers, as well as the American Institute of Chemical Engineers.

Mr Conviser is active on a number of ASA sectional committees. He is chairman of Subcommittee 11 of ASA Sectional Committee B31, on Piping Code for the Process Industries. He is also a member of ASA Sectional Committee B73 on Centrifugal Pumps for the Chemical Industry and of Subcommittee 3 of Sectional Committee B31, on Oil Refinery Code for Pressure Piping.

Two of the members-at-large of the CIAB were re-elected this year—J. C. Lawrence, Senior Consulting Engineer, American Institute of Chemical Engineers, and H. W. Schmidt, Materials Engineering Department, Dow Chemical Company.

Are These Cases Work Injuries?

Rulings of the Committee on Interpretations are now being issued on whether unusual industrial injury cases are to be counted as "work injuries" under the revised edition of American Standard Method of Recording and Measuring Work-Injury Experience, Z16.1-1954. Sponsors of ASA Sectional Committee Z16 are the National Safety Council and the Accident Prevention Department of the Association of Casualty and Surety Companies.

Case numbers in the new series start with 400. The cases below represent the sixth installment in the series under the revised edition of the standard. The numbers in parentheses refer to those paragraphs in the standard to which the cases most closely apply.

Cases 400-450 have been reprinted with an index prepared by the National Safety Council. To make it easy to locate all cases applying to any section of the standard, the index is arranged both numerically by paragraph number of the standard and numerically by case number. Each index reference includes a brief description of the case. Reprints are 50 cents per copy, available from ASA. Liberal discounts are offered for quantity orders.

As soon as the second 50 cases have been published, this index will be revised and republished to include all 100 cases.

CASE 451. (5.2)

The employee stated that at 8 A.M. on August 25 he bent down to straighten a swivel wheel on the front of a shop truck. Without touching the wheel or doing anything of an unusual nature aside from bending over, he got a "catch" in his back and was unable to stand. The company doctor arranged for the employee to be taken to an osteopath for treatment. Improvement was shown after the first treatment; but the patient was unable to return to work the next day. He had had a sore back before but not as bad as this case.

The osteopath stated that this could have come on the employee any time without any unusual effort or act and was probably caused from a cold. (The employee admitted sleeping next to an open window and claimed that there had been a considerable breeze during the previous night.) The osteopath also stated that there was no permanent injury.

Decision: This injury should not be included in the work injury rates. The committee concluded that the circumstances as described did not meet the requirements of paragraph 5.2 of the standard.

CASE 452. (5.2)

An employee worked all day on his knees in a bent-over or stooped position because of lack of head room. Although there was not an accident, not a fall, and there was no excessive straining in using his hand tools, he received a sore back which resulted in several days of disability. The question raised was whether this description met the requirements of paragraph 5.2 of the standard.

Decision: This injury should be included in the work injury rates. the committee concluded that the fact that this employee was working in a bent or stooped position all day should be considered as an over-exertion or an incident as contemplated by the standard.

CASE 453. (5.2a)

An employee with a helper was removing a rubber vacuum boot on a 6-inch filtrate line from a rotary washing filter. The rubber boot was 18 in. long and fit over the end of a 6-in. lead elbow. It was fastened to the elbow by means of a metal clamp. The lead elbow was flanged and bolted to the filter head. Bolts holding the flange had been loosened to permit elbow movement. The men were using a piece of 2 in. x 6 in. x 4 ft. lumber as a pry. The bottom of the lead elbow was 32 in. above floor level. The 6-in. board used edgewise reduced the lifting height to 26 in. which permitted both men to stand in a normal, safe lifting position. After using the pry, one employee noticed pain in his back. This was a routine job. It had been done many, many times by only one employee. There was no accident, incident, slip, trip, or fall, sudden effort, or over-exertion. This employee had had a similar back pain in May 1953 while doing another routine job. He had lost 23 days at the time.

Decision: This injury should be included in the work injury rates. The committee believed that this description meets the requirements of paragraph 5.2(a) of the standard.

CASE 454. (A1.6h)

The employee, while on his lunch period, decided to cut to size a small piece of wood that he was going to use at home. In the course of his regular work this employee had to use table saws, and so he decided to cut the piece of wood on one of these saws. He did so without the knowledge or consent of his foreman, although it was a company rule that doing outside work on company machines must only be done with the express consent of the foreman. Because the piece of wood was too small to be held in the regular holding bracket that was attached to the machine, the employee removed the bracket and attempted to hold the piece of wood in his hands. As he fed the piece of wood into the saw it kicked back and his right index finger went into the saw and was amputated at the first phalanx.

Decision: This injury should not be included in the work injury rates. The committee concluded that this employee had taken himself out of his employment when he proceeded to operate the saw for his personal use during his lunch period, without the knowledge and consent of his employer.

CASE 455. (1.2.4.)

An employee was given a bear-hug by another employee. The company was satisfied that this occurred in the course of employment. This employee was seen by the company doctor, whose treatment and advice were as follows: "Rib belt applied, heat, Zoalite 20 minutes. Exquisitely tender over lower left ribs and chest wall. X-rays advised. Pleurisy belt, adjusted work."

The x-rays and treatment advised by the doctor were carried out. The question of adjusted work was studied and the company found that they had a regularly established job which the employee could perform according to the doctor's instructions. However, the employee felt that this adjusted work would be as difficult for her as the work she was regularly doing. Rather than force her to work against her will, the request for an excused absence was honored.

The company asked, Does absence under these circumstances constitute a temporary total disability which should be included in the rates?

Decision: This should be treated as a medical treatment case and not as a temporary total disability. The committee

commented that the company physician stated that this employee was physically capable of performing a job which the plant management had made available to her. Even though the employee declined to perform this available job, the injury should not be considered a temporary total disability.

Case 456. (5.2)

In a steam generating station a turbine operator, age 33 and employed eight years, was starting an electrically driven boiler feed pump at 6:20 A.M. near the end of his 11 P. M. to 7 A. M. shift. In connection with this operation it was necessary for him to open an 8-in. valve by hand. When he was relieved at 7 A.M., he reported the operation to the new watch engineer but made no mention of any injury or any pain occurring in connection with the operation. He went home at 7 A.M. and went to bed soon thereafter.

At 3:30 P.M. the same day, he called the watch engineer then on duty, stating that he would be out until further notice because he had injured himself in starting up the boiler feed pump that morning. This was reported to the safety supervisor who called the injured man's home (before 5 P.M.) and found that he had gone to see his doctor.

The safety supervisor called his home the next day at which time the injured man stated he first felt pain in his back upon arising from bed after sleeping on the day of the accident. He stated he was not aware of any strain when operating the valve but that it turned very hard and he felt that he must have strained his back at that time. He stated that the doctor told him he had a "minor back strain" but that he should be OK for his regular work in 3 to 4 days. X-rays were taken which were negative but his back condition did not improve as rapidly as expected and he returned to work after being out 16 days.

Decision: This injury should not be included in the work injury rates. The committee did not believe that there was a clear record of an accident or an incident. The members noted that it was not until 8½ hours after the employee had finished his work that he discovered the back pain. The committee did not think that this was the kind of specific evidence which was intended by the standard to define a clear history of an accident or incident.

Case 457. (5.2)

About 1:15 A.M. while working on the "graveyard" shift from 12 midnight to 8 A.M., the injured employee and a fellow workman were removing defibrator orifices for cleaning. A defibrator orifice is a hollow steel casting 18 in. long, weighing 110 lb, that is quite similar in shape to a 4-in. cleanout fitting in a plumbing line. It was, and had been for several months, one of the duties of the injured man to remove three of these orifices from the line weekly, or oftener if necessary, for cleaning, as stated above.

In this instance, having removed the orifices and laid them flat upon the concrete floor, the injured man stooped over to tilt one of them up on end, an act which he had performed many times previously without injury to himself. It is calculated that in doing so he was called upon to lift no more than half the weight of the orifice. Nevertheless, as he started to exert lifting effort he felt and heard his back "pop" and immediately experienced pain in the lumbo-sacral region. The attending physician diagnosed the injury as a lumbo-sacral strain and was satisfied that it could have arisen out of said accident or incident.

An investigation revealed no record of an accident, or an incident such as a slip, trip or fall, or blow on the back. The injured stated that he did not make a "sudden effort" by lifting quickly or with a jerk, but with a gradual motion. There was, however, some question as to whether or not "overexertion" was involved, and it was on this point that a decision by the Committee on Interpretations was requested.

Decision: This should be included in the work injury rates in accordance with the actual disability experienced by this employee. The committee believed that there was overexertion by the employee in lifting one end of the 100-lb casting. The company doctor was apparently satisfied that the employee could have suffered a back strain therefrom.

Case 458. (1.6)

Without employee's knowledge, kerosene had been spilled on his work shirt—when, where, or how unknown. When starting to work at 7 A.M., the employee put his work shirt on. After he wore it a few hours he noticed a burning sensation around his waist. He loosened his belt and continued to wear the shirt. That evening, on arriving home, he noticed a patch of blisters about 10 in. long and 1 in. wide.

The employee did not report to the first aid attendant at any time during the day of the alleged accident. However, when he noticed his condition upon his return home after he had completed his day's work, he went to his family physician. He was a 78-year-old man. He lost five days from work.

Decision: This injury should be included in the work injury rates. The committee agreed that the information is incomplete, but went on the assumption that the kerosene was spilled on the employee's work shirt at his place of work, and on this assumption the members believed that the disability arose out of and in the course of his employment.

Case 459. (5.9)

A pattern maker was repairing a large pattern which had been placed by a lift truck on a bench 25 in. high. A small core box from the pattern had been placed on the floor under the pattern while the pattern was being repaired. After the pattern was finished, the core box (not needing repair) was placed on the pattern and the entire pattern removed by lift truck.

The core box handled was made out of wood and had the following specifications: 18 in. long x 12 in. wide x 10½ in. high; weight 27 lb.

The following afternoon the employee reported to the dispensary stating that his right shoulder bothered him. It had begun to bother him when he picked up the core box identified above. Employee further stated that the lift was not high (31 in.) and he did not jerk or slip while lifting the box. He could not say why it should hurt, as nothing had happened; he only recognized the fact that it did bother him at the time.

X-ray examination found the employee to have bursitis in both shoulders. Within two days time his left shoulder also bothered him. He was given treatment for 17 days during which time he did not work. After this period of time he was again able to work.

In the doctor's opinion he could not see anything that the employee could have done that would have caused aggravation of his condition.

The company asked whether or not this injury should be considered as arising out of and in the course of employment.

Decision: This should not be included in the work injury rates. The committee called attention to the fact that paragraph 5.9 does include muscular disabilities such as bursitis. The reason that this injury should not be included in the rates is the statement by the doctor that the act of lifting the 27-lb core box would not have aggravated an existing bursitis. If it could not have aggravated it, then the committee did not believe that it could have caused the bursitis.

Case 460. (A1.6 j)

In paragraph A1.6(j) of the Appendix to American Standard Z16.1-1954 there is a statement that taking a shower would be considered as arising out of and in the course of employment, "if use of the facilities was occasioned by the employee's work." The committee was asked for a further interpretation of the meaning of this statement.

Decision: The committee suggested that this statement would apply if employee's work made him grimy to the extent that he would be expected to cleanse himself well before leaving the work place and going home, or at interim times during the working period, such as may be required of a garage mechanic, or coal handler; or if employee's work exposed him to toxic or irritating substances which must be washed off before going home, or to lunch, or perhaps intermittently during the working period.

Case 461. (1.6)

An employee suffered an injury to his left eye at about 6:40 P.M. while working the "B" shift. He reported to the doctor at the emergency hospital. The employee told the doctor that he had been struck in the eye by the point of a 12 in. x ½ in. steel rod. The employee was

a craneman on the shift. As such, he operated the crane to unload a carload of residues on the casting machine pit and then worked as crane chaser in the converter aisle. Around 6 P.M., the converters were operating so that no crane service was required and the employee had no immediate work to perform. The shift mechanic was in the converter department to check mechanical punching units and was asked by the injured employee to help him make some steel tent pegs for his own use. The employee did not ask his foreman's permission to do so; but as the work was performed on the machinist's work bench behind the converters he did not leave the department.

The tent pegs were made from scrap ½ in. steel rods. The shift mechanic cut the rods to length with an oxy-acetylene torch; welded a nut on one end and heated the other. The employee then held the heated rod with a pair of channel locks and sharpened the end with a hammer, using the work bench as an anvil. As the shift mechanic turned to put away the torch after heating the last rod (they had made four or five pegs), the employee informed him that the rod had slipped from the channel locks and struck him in the eye. He also told him that he could see nothing with the injured eye. The shift mechanic told him to report to his foreman and he, the shift mechanic, returned to duty.

The company stated that it was their policy not to condone personal work done on company time without the knowledge and permission of the foreman, but this policy was not too rigidly enforced.

Decision: The injury should not be included in the work injury rates on the basis that this employee took himself out of his employment while he was making tent pegs for his own personal use.

Case 462. (5.2)

On Monday an employee reported to the plant first aid and safety department that the previous Thursday, which was the last day of his work week, his back had become progressively more sore until he could barely finish out the day. However, he said he did not know of any specific time the back started to pain him, nor of any definite action which might have caused the injury.

This worker was a molder and caster in an electrotyping foundry who, in the regular course of his work, lifted the cast electrotypes out of the casting pan by grasping the plate with a pair of tongs.

Two weeks later the management finally received the official report of the accident as made out by the department foreman in which the workman had stated: "In lifting the cast with tongs out of the casting pan and placing it over the side into the sink for cleaning, the lift had to be repeated because someone was in the way and on the back swing the back was strained or twisted."

Decision: This case should be included in the work injury rates. The committee based its decision on the official written report as being the facts in this case.

Case 463. (1.1 ; 5.16)

An electrical lineman climbed a pole and started to work on some energized electric wires. No one actually saw what happened, but the employee was observed to have slumped in his safety belt. In spite of the best first aid efforts, the employee died. There was some question as to whether the employee had been electrocuted or whether he might have died of a heart attack.

Decision: This should be included in the work injury rates. Although it was not certain whether this employee was electrocuted or died of a heart attack, the committee believed that even if it was a heart attack, this could well have been aggravated by the activity of this employee in climbing the pole. Since there was no particular evidence that death was outside of employment, the members believed that it should be counted. The committee realized that there was a certain exception stated in paragraph 5.16. The members believed that this exception should be applied where there was a specific decision by a doctor. In the absence of such a decision by a physician, questionable cases should be counted unless there were strong grounds on a non-medical basis for not counting them.

Case 464. (1.6)

Hypothetical case on reportability of suicide. Not to be used as a precedent.

Case 465. (5.3)

This case involved a watchman. The first knowledge of any trouble was on November 10 when this man came to the company nurse with a swollen and apparently infected right hand. She found that he had a temperature and sent him home with advice to see his doctor. No claim was made of an occupational accident up to that time.

On November 11 this man called his supervisor and said that he could not come in to work due to an infection of his hand. He then stated for the first time that his condition was caused by his work and gave the following story:

On November 6 he noticed an irritation or infection on the back of his right hand which he believed was caused by an ingrown hair. It had formed a pimple. The next two days were his days off. He worked on November 9, on which day his hand bothered him some but he bathed and treated it himself. The following day he reported to the company nurse as noted above. He claimed that his work glove had irritated the pimple and knocked off the scab so that soot from the boiler got into the open wound, causing the infection. He returned to work on November 14.

Decision: This should be counted as a work injury. The committee believed that paragraph 5.3 applied to this case, and suggested that it was quite similar to Case No. 407.

Case 466. (1.6)

An employee returned to work after lunch break. When he boarded the ship on which he was working, the Officer of the Watch observed that he was intoxicated, and had him removed from the ship. He was assisted ashore by a fellow employee who took him to the power-house and left him there while the first-aid man was summoned.

On returning to the power-house, the employee and first-aid man discovered that the intoxicated employee had disappeared. An intensive search was made of the power-house and surrounding buildings on three different occasions during the afternoon, with no success. It was concluded that he had left the Yard by some way other than the main entrance to avoid being brought to his foreman.

A week later his body was found on top of one of the boilers, the surface of which was flat. The day had been very hot and no one suspected that he was capable of climbing to that spot. Once up there, he had removed his cap and shoes and had lain down to sleep. The death certificate recorded "death due to excessive heat and intoxication" although it had not been possible to perform an autopsy because of the condition of the body.

Decision: This fatality should not be included in the work injury rates. The committee believed that the employee had taken himself out of his employment when he climbed to the top of the boiler under the influence of his intoxication. This ruling should not be considered a precedent for excluding all cases in which the injured is intoxicated.

Case 467. (A1.6 g)

A building guard requested that he be excused from work approximately one hour early in order to have alterations made to his uniform trousers, furnished him by the company at its cost. The alterations in question were to relieve some tightness for the sake of comfort. Company policy was that where minor alterations or repairs to guards' uniforms were required, the usual procedure (although not followed in this case) was that the cleaning firm provided these services at the company premises and took measurements on the spot. Because the guards had to be there when the measurements were taken, this was ordinarily done on company time.

The employee in question was granted his request to leave early. While apparently attempting to cross a street several blocks from his regular place of employment, he was struck by a taxicab and subsequently died. The spot where the fatal accident occurred was in general between his place of employment and the tailor shop, although not on the most direct route.

Decision: This fatality should be included in the work injury rates. The committee concluded that this employee was still within his employment at the time of the accident.

Case 468.

Borderline case, incomplete facts. No decision rendered.

FROM OTHER COUNTRIES

Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. Titles are given here in English, but documents are in the language of the country from which they were received. An asterisk * indicates that the standard is available in English as well. For the convenience of readers, the standards are listed under their general UDC classifications. In ordering copies of standards, please refer to the number following the title.

389 METROLOGY. WEIGHTS AND MEASURES. STANDARDIZATION

Uruguay (UNIT)

Inch-millimeter conversion tables UNIT 115-56

615.47 SURGICAL AND MEDICAL INSTRUMENTS AND APPLIANCES

United Kingdom (BSI)

Gas cylinder trolleys for use in hospitals BS 2718:1956

Sphygmomanometers, aneroid type BS 2743:1956

Sphygmomanometers, mercury type BS 2744:1956

Bed pan and urine bottle washers BS 2745:1956

621.3 ELECTRICAL ENGINEERING

Germany (DNA)

Symbols for tests with magnetized powder DIN 54121

Testing of film holders for x-rays and gamma-rays DIN 54112

Rules for protective measures against technical x-ray installation up to 300 kv DIN 54113

Household fuse boxes DIN 43637

Nominal rating of fixed capacitors DIN 41311

Switches for electric hot plates, etc. DIN 44927

Multiple telecommunication plugs and receptacle strips DIN 41621/2

Graphical symbols used in power-and telecommunication installations DIN 40700

Asynchronous, three-phase, squirrel-cage motors DIN 42671

Stationary lead-acid storage cells, rating DIN 40734

Fuses for telecommunication circuits DIN 41584, Bl.1, 2

Fixed capacitors, 125-500 v, class 3 DIN 41387

India (ISI)

Series of preferred values for capacitors and resistors IS 824-1956

Colour code for fixed resistors IS 825-1956

Israel (SII)

Electric flat irons SI 182

Italy (UNI)

Suspension cable and wire for tramway overhead contact line UNI 3701/2

Netherlands (HCNN)

List of term pertaining to power distribution lines NEN 2118

Rules for fitting up low voltage cables in junction and branching boxes N 3160

Graphical symbols used in telecommunication V 2051

Graphical symbols used in power installations V 2054

Anode batteries, layer built, with manganese dioxide depolarizers V 3061

Switzerland (SNV)

Round copper wire, varnish insulated: definition and nomenclature VSM 23730/1

Specification for ordering wire for windings VSM 23732

United Kingdom (BSI)

Varnished cotton cloth sheet and tape for electrical purposes BS 419-1956

Wire-armoured paper-insulated cables for use in mines BS 760-1956

Automobile filament lamps BS 941-1956

Glossary of terms used in industrial high-frequency induction and dielectric heating BS 2759-1956

Thin vulcanized fibre sheet (including leatheroid) for electrical purposes BS 2768-1956

Electrical equipment of machine tools BS 2771-1956

Electrically heated blankets for domestic use BS 2612-1956

Memorandum on the design of electrical apparatus having double insulation BS 2754-1956

Copper and cadmium-copper stranded conductors for overhead electric traction systems BS 2755-1956

Classification of insulating materials for electrical machinery and apparatus on the basis of thermal stability in service BS 2757-1956

Trolley and contact wire for electric traction BS 23-1956

Fixed paper-dielectric capacitors for D.C. for use in telecommunication and allied electronic equipment BS 2131-1956

P.V.C. insulation and sheath of electric cables BS 2746-1956

Safety requirements for electric fires BS 1670-1956

Portable electric tools (hand-held) BS 2769-1956

Tubular fluorescent lamps for general lighting service BS 1853-1956

Dimensions of 3-phase electric motors (totally enclosed fan-cooled) BS 2083-1956

Paper-covered rectangular copper conductors for transformer windings BS 2776-1956

High-voltage bushings BS 223:1956

Organic baking impregnating varnishes for electrical purposes BS 2778:1956

Gamma-ray source capsules for radiography BS 2783:1956

Aluminum conductors in insulated cables BS 2791:1956

621.56 REFRIGERATION

Australia (SAA)

Domestic refrigerators (automatic compression type) AS B.116-1956

Germany (DNA)

Ice trays for household electric refrigerators DIN 8940

Two types of refrigerating machine valves DIN 8921/2

6 stds for solderless pipe fittings of refrigerators DIN 8904, 8909, 8911/2, 8914, 8918

621.791 WELDING, SOLDERING, CUTTING

Germany (DNA)

Soldering apparatus using liquid fuel DIN 8508

Gasoline torch DIN 8502/3

Methods of making different welds DIN 1912, B1.1

United Kingdom (BSI)

Tests for use in the approval of welders-Part 2: Manual metal-arc and oxy-acetylene welding of mild steel and low alloy steel pipelines and pipe assemblies BS 2645: Part 2:1956

621.88 MEANS OF ATTACHMENT. FASTENINGS

Bulgaria

Lock washers (4 stds) BDS 1975/8

Straight pins (3 stds) BDS 1980/2

Retaining spring rings BDS 2170-55

Germany (DNA)

Taper pin with inner tapped hole DIN 7978

Woodruff keys DIN 6888

Self-tapping screws DIN 7513

Self-locking cap nuts DIN 986

Slotted- and castle-nuts, high DIN 935, B1.1

Slotted- and castle-nuts, low DIN 937

Tee-bolts DIN 508

Square-head Whitworth screws DIN 479, B1.2

Round-head rivets for steel construction DIN 124, B1.1

Round-head rivets for boiler construction DIN 123, B1.1

Countersunk-head rivets 10-36 mm diameter DIN 302, B1.1

Taper pins DIN 1

Straight pins DIN 7

2 stds for taper pins, one end threaded DIN 258, 7977

Netherlands (HCNN)

Metric screw thread, fine, diam 1 mm to 110 mm N 1305
Two-piece copper spacing clips for copper pipes V 2286

Poland

5 stds for set screws PN M-82307/8, -272/3, -276-1955
Locknuts and locknut spanner PN M-82470, -65021, -55
Letter symbols for screw threads PN M-02002-55

Roumania (CSS)

Capscrews with slotted and cross-drilled heads STAS 4812-55
Headless set screw, cup point STAS 4846-55
Headless set screw, dog point STAS 4867-55
Socket wrench, hexagon, double, metric STAS 4885-55
Hexagon and square head set screw, cone point STAS 4922/4-55
Wire nails STAS 4926-55

Switzerland (SNV)

Nuts, slotted and castle VSM 15337, B1.1/3
Studs, Whitworth thread, from ¼ in to ⅞ in VSM 12200
Studs, Whitworth thread, from 1 in to 2 in VSM 12201
Studs, metric thread, M3 to M14 VSM 12202, B1.1, 2
Studs, metric thread, M16 to M30 VSM 12203 B1.1, 2
Taper pin type J VSM 12782
Screwdrivers VSM 35601
Screwdriver handles VSM 35610

United Kingdom (BSI)

Parallel screw threads of Whitworth form BS 84:1956

629.13 AIRCRAFT ENGINEERING

Japan (JISC)

Standard atmosphere W 0201-54*
Rivets for aircraft JIS W 0103
Ignition switches for aircraft JIS W 4504
Weight distribution of aircraft JIS W 0602
Cowling fasteners for aircraft JIS W 1518
Hose clamps for aircraft JIS W 1804
Valves for pneumatic tires for aircraft JIS W 2504
Gyro horizon indicator of air drive type JIS W 6107
Directional gyro indicators of air drive type JIS W 6203
Electrical (dc) fuel gage of float type for aircraft JIS W 6315
Tires and rubber tubes for aircraft JIS K 6390/1

United Kingdom (BSI)

Steel pan head bolts (unified threads) for aircraft BS 2 A.116, July, 1956
Corrosion-resisting steel pan head bolts (unified threads) for aircraft BS 2 A.117, July, 1956
Aluminum alloy pan head bolts (unified threads) for aircraft BS 2 A.171, July, 1956
A-C electrically operated artificial horizons for aircraft BS G152, Aug. 1956
Basic characteristics of radio service selection and intercommunication systems for civil aircraft BS R2, Aug. 1956
Air-driven artificial horizons for aircraft BS G.153, Nov. 1956
100 countersunk precision head aluminum and aluminum alloy rivets for aircraft BS SP.68 to 71, Nov. 1956

665.4/.5 MINERAL OILS, FATS, AND WAXES

Argentina (IRAM)

Fuel oil IRAM 6538
Flash point test by Pensky-Martens method IRAM 6539
Method of test for cloud and pour point IRAM 6540
Method of test for water and sediment by means of centrifuge IRAM 6541
Conradson method for determination of carbon residue IRAM 6542
Viscosity test by means of Saybolt viscosimeter IRAM 6544
Fuel for reactive motors IRAM 6549
Test for water miscibility of aircraft fuels IRAM 6554
2 stds for testing sediment of petroleum products IRAM 6535/6
Benzene—method of test for thiophene IRAM 1131
Benzene—method of test for solidifying point IRAM 1132
Method of testing oxidation stability of gasoline (induction period method) IRAM 6531

Belgium (IBN)

Test for sulfur content in petroleum oils by quartz tube combustion NBM 52.048-56
Melting point of bituminous products NBM 52.031-56

Czechoslovakia (CSN)

Turbine oil CSN 65 6620
Benzene (85-160°) CSN 65 65 42
Petroleum products, viscosity indexes CSN 65 62 18
Determination of iodine number CSN 65 61 96

France (AFNOR)

Test for oxydation stability of gasoline (induction period method) NF M 07-012
Method of test for cloud and pour points of lubricating oils, liquid fuels, and gas oils NF T 60-105
Method of test for melting point of paraffin wax NF T 60-114
Determination of temperature of creep NF T 60-122
Test for distillation of cut-back bituminous products NF T 66-003

Germany (DNA)

Testing of mineral oils. Errors and tolerances DIN 51849

Poland

2 stds for determining sulfur content in petroleum products PN C-04088, -92
2 stds for testing petroleum products PN C-04016, -71, -195

Roumania (CSS)

Cylinder oil STAS 385-55

Uruguay (UNIT)

Determination of flash point by Cleveland open cup method UNIT 116-56

USSR

Petroleum products: 3 stds for different test methods GOST 7822, GOST 981, 5337-55
Petroleum products: special bituminous oils GOST 3508-55
Airfilter oil GOST 7611-55
Petrolatum, specifications GOST 4096-54
Ceresin wax-paraffin compounds GOST 3677-54
Test for heat of combustion of light petroleum products GOST 5080-55
Clear petroleum products, test for iodine numbers and hydrocarbon content GOST 2070-55

669 METALLURGY

Belgium (IBN)

Copper and copper alloys for casting NBM 267-56

France (AFNOR)

3 stds for different chemical analysis of lead NF A 06-530/2
3 stds for rail "Vignol" 46, 50 and 55 lb type, and respective fish plates NF A 43-313/4, -31

Germany (DNA)

Copper alloy bands for leaf-springs DIN 1780/1
Nickel anode DIN 1702
Copper-nickel alloys DIN 17664
Round steel for springs DIN 2077

India (ISI)

Method for determination of weight, thickness and uniformity of galvanized articles other than wires and sheets IS 728-1956
2 stds for wrought aluminum and aluminum alloy wire and rivet stock IS 739/40-1956

Israel (SII)

Twisted steel bars for concrete reinforcement S.I. 186

Italy (UNI)

Aluminum alloy ingots and castings (6 stds) UNI 3717/8, 3735/8
3 methods of test for silver content in silver alloys UNI 3751/3
Microscopical analysis of ferrous materials UNI 3775
Determination of total aluminum content in ferro-silicon UNI 3776
Malleable iron, specifications, tests UNI 3779

Japan (JISC)

Heat-resisting steels JIS G 4302*
Spring steels JIS G 4801*
High carbon chromium bearing steel JIS G 4805*
Carbon steel castings JIS G 5101*
Malleable iron castings JIS G 5701*
Testing of hot-dipped zinc coating JIS H 0401*
Virgin aluminum ingots JIS H 2102, 2110*
Brass sheet JIS H 3201
Copper strips JIS H 3301*
Aluminum foil JIS H 4191*
Surface film by anodic treatment JIS H 8601*
5 stds (bound together) for recommended practice for castings (bronze- and brass-alloy) JIS H 9141/5
Aluminum alloy castings JIS H 5202

Spain (IRATRA)

Aluminum used for de-oxidation of steel UNE 38113
Aluminum 99.5% for forging UNE 38114
Steel with good weldability characteristics UNE 36024
High-temperature resistant steels UNE 36025
Copper shapes, forged and drawn UNE 37109
Lead tubing UNE 37202
Special steels with low coefficient of elongation UNE 36018
Symbols for indicating various treatments of alloys UNE 38002
9 stds for different grades of aluminum and aluminum alloys UNE 38112, -115, -381/2, -600, -611/3, -641
Lead plates, quality, sizes, tolerances UNE 37203

United Kingdom (BSI)

Methods for the analysis of iron and steel:
Part 14: Copper in iron and steel BS 1121:Part 14:1956
Part 25: Vanadium in iron, steel and ferrovanadium BS 1121:Part 25:1956
Part 36: Copper in iron and steel (absorptiometric method) BS 1121:Part 36:1956

Gray iron castings BS 1452:1956

Glossary of terms relating to iron and steel-Part 7:Wrought iron BS 2094:Part 7:1956
Part 8:Steel tubes and pipes BS 2094:Part 8:1956

Iron castings with spheroidal or nodular graphite BS 2789:1956

Data on mechanical properties of steels at elevated temperatures—
No. 1:Wrought carbon steel (0.08% to 0.25% carbon) PD 2647
No. 2:Wrought 1% chromium, ½% molybdenum, low carbon steel PD 2648

Leaded brass strip for use in manufacture of parts for clocks and watches and for other instruments BS 2785:1956

Round hard drawn brass wire for springs BS 2786:1956

Iron and steel for colliery haulage and winding equipment
Part 1 Wrought iron (not for mine car drawgear) BS 2772:Part 1:1956
Part 2 Wrought steel BS 2772:Part 2:1956

Notch ductile steel for bridges and general building construction BS 2762:1956

Steel wire for ropes BS 2763:1956

674 WOOD INDUSTRY

Australia (SAA)

Wood treated with lycticides A.S. 0.60-1956

Belgium (IBN)

Methods of quality testing of wood NBN 225-56

Bulgaria

Physical and chemical testing of wood BDS 1130-55

Defects of timber, classification BDS 1952-54

Germany (DNA)

Test for moisture content in wood wool DIN 52351

Ireland (IIRS)

Coal tar creosote for the preservation of timber IS 43:1956

Italy (UNI)

Different tests of wood fiber boards (9 stds) UNI 3741/9

Spain (IRATRA)

Wood, general terminology, characteristics, defects, etc. UNE 41044/50

Wooden packing containers, nomenclature UNE 49001

United Kingdom (BSI)

British-made plywood for general purposes BS 1455:1956

678 RUBBERS AND PLASTICS

France (AFNOR)

Sulfur used in rubber manufacturing NF T 45-003

Germany (DNA)

Sampling rubber for test DIN 53502

Poland

2 stds for mechanical tests of rubber PN C-04205, -278

3 stds for testing rubber PN C-04206, -16, -79

Roumania (CSS)

Acid- and diluted base-resistant rubber tubing STAS 4859-55

Switzerland (SNV)

Rubber testing for tear strength VSM 77051

Determination of international hardness of rubber by durometer VSM 77052

Ageing test of rubber VSM 77053

Determination of total contents of solid matters in latex VSM 77081

Determination of rubber contents in latex VSM 77082

Determination of potassium index of latex VSM 77083

Determination of alkalinity of latex VSM 77084

United Kingdom (BSI)

Methods of testing vulcanized rubber:
Part A11. Determination of resistance to crack growth BS 903:Part A 11:1956
Part A16. Determination of swelling in liquids BS 903:Part A 16:1956
Part A19. Accelerated ageing tests BS 903:Part A 19:1956
Parts F 1 to F 9. Methods of testing soft cellular rubber BS 903:Parts F 1 to F 9:1956

Methods of testing vulcanized rubber:
Part C1. Determination of surface resistivity of insulating soft vulcanized rubber and ebonite BS 903:Part C 1:1956
Part C2. Determination of volume resistivity of insulating soft vulcanized rubber and ebonite BS 903:Part C 2:1956

Aminoplastic moulding materials BS 1322:1956

Rubber tubing and bungs for laboratory use BS 2775:1956

Vulcanized chloroprene rubber compounds BS 2752:1956

Methods of testing vulcanized rubber:
Part C3:1956:Determination of permittivity and power factor BS 903:Part C 3:1956

Vulcanized butadiene/acrylonitrile rubber compounds BS 2751:1956

Thin PVC sheeting (flexible, unsupported) BS 1763:1956

Thick PVC sheeting (flexible, unsupported) BS 2739:1956

30 denier nylon warp-knitted fabrics BS 2722:1956

USSR

High-pressure rubber hoses GOST 7339-55

Rubber boots GOST 5375-55

Softening oil used for regenerating rubber GOST 7613-55

Sheet rubber, technical GOST 7338-55

2 stds for tensile and hardness testers GOST 7761/2-55

Rubber stoppers GOST 7852-55

Yugoslavia (JUS)

8 stds for rubber hoses with fabric reinforcement for different purposes JUS G.C6.020/7

744 TECHNICAL DRAWINGS

Argentina (IRAM)

Graphical symbols for transmission IRAM 4519

Bulgaria

Graphical symbols used on piping technical drawings BDS 1673-54

NEWS BRIEFS.....

• Faster and more accurate development of military specifications calling for reinforced plastics is the objective of a newly formed committee of the Reinforced Plastics Division of the Society of the Plastics Industry, Inc.

According to James Lunn of Lunn Laminates, Inc, chairman of the new Military Specifications Committee, "It is the hope of the industry through this cooperative industry-government effort to achieve manufacturing economies and administrative efficiencies in the production of military requirements involving reinforced plastics. Formalization of the effort into a committee is the outgrowth of the reinforced plastics industry's realization of the problems of government in quickly and efficiently developing standards in a field that has experienced an increase of more than 1,750 percent in production volume since 1945 and now numbers over 200 companies."

• To fill industry's need for cellular plastics standards the American Society for Testing Materials, Committee D-20 on Plastics, has organized Subcommittee XX on Cellular Plastics. I. T. Stoneback, Federal Telecommunications Laboratories, is chairman. Betty Lou Raskin, Johns Hopkins University Radiation Laboratory, is secretary. The subcommittee has organized a section to develop test methods and other sections to develop specifications for polyurethane, polyvinyl chloride, polystyrene and polyethylene cellular plastics. The group is holding its next meeting the latter part of February in Roanoke, Virginia.

ASTM Committee D-20 on Plastics was organized in 1937 for the development of test methods and specifications applicable to plastics and their raw materials and to the finished products made from plastics. Its membership of over 200 is composed of representatives from the leading laboratories and plastics manufacturing companies of the United States as well as important consumer representatives and Government agencies. The chairman is Frank W. Reinhart, National Bureau of Standards, Washington, D.C.

Those interested in participating in the development of standards for cellular plastics are invited to write to I. T. Stoneback, Chairman, ASTM Committee XX on Cellular Plastics, Federal Telecommunications Laboratories, Nutley, N.J.

• Greater convenience, comfort, and security for users of gas-fired room heaters is assured by adoption of new gas-fired room heater approval requirements, published early in January, 1957, as American Standard Z21.11-1956. The new requirements were developed under the sponsorship of the American Gas Association working through the procedure of the American Standards Association.

These requirements represent basic standards for safe operation, substantial and durable construction, and acceptable performance of gas-fired room heaters. The American Gas Association has been working through the American Standards Association to establish approval requirements since 1930. The AGA had worked independently on approval requirements of gas-fired room heaters as early as 1926.

Such equipment must pass rigid tests conducted by the AGA testing laboratory before the manufacturer is authorized to display the well-known AGA blue star insignia on his product. Plumbing and heating contractors have the assurance that equipment which bears this insignia will perform according to approved American Standards.

Development and revision of the standard dealing with gas-fired room heaters is done by an ASA sectional committee sponsored by the AGA with representation from gas appliance manufacturers, gas utilities, insurance interests, government agencies, architects, building, plumbing and heating contractors and consumer groups.

Safe and satisfactory operation of a gas-fired room heater depends to a great extent upon its proper installation. To assure satisfactory performance, appliances which comply with these requirements should be installed in accordance with the rules included in another American Standard concerning the installation of gas piping and gas appliances in buildings, Z21.30-1954. This standard is now well on its way toward becoming national in application. It has already been adopted by 375 cities, and incorporated by a number of states in their building code requirements.

• A Recommended Revision of Dimensions and Tolerances for Flexible Standard-Wall Polyethylene Pipe, Commercial Standard CS197-54, has been presented to the industry for approval, according to the Commodity Standards Division of the U.S. Department of Commerce.

The recommended revision was proposed by the Society of the Plastics Industry, Inc, and has been approved by the Standing Committee of the Industry. The current edition of the standard covers only dimensional requirements, whereas the revision contains some significant specifications for quality. Two additional series of wall thicknesses are also included.

Copies of the recommended revision, entitled Flexible Polyethylene Plastic Pipe, TS-5348, may be obtained, while the supply lasts, by writing to F. W. Reynolds, Commodity Standards Division, U.S. Department of Commerce, Washington 25, D.C.

AMERICAN STANDARDS UNDER WAY

Status as of February 1, 1957

Legend — *Standards Council* — Approval of Standards Council is final approval as American Standard; usually requires 4 weeks. *Board of Review*— Acts for Standards Council and gives final approval as American Standard; action usually requires 2 weeks. *Standards Board* — Approves standards to send to Standards Council or Board of Review for final action; approval by standards boards usually takes 4 weeks. Note—Send check when ordering standards listed as published to avoid service charge for handling.

ACOUSTICS, VIBRATION AND MECHANICAL SHOCK

American Standard Approved

Pickups for Shock and Vibration Measurement, Method for Specifying the Characteristics of, Z24.21-1957
Sponsor: Acoustical Society of America

BUILDING AND CONSTRUCTION

American Standards Approved

Basis for the Coordination of Dimensions of Building Materials and Equipment, A62.1-1957 (Revision of A62.1-1945)
Sponsors: American Institute of Architects; Associated General Contractors of America; National Association of Home Builders; Producers' Council

Gypsum and Gypsum Products, Methods of Testing, ASTM C26-56; ASA A70.1-1957 (Revision of ASTM C 26-54; ASA A70.1-1956)
Sponsor: American Society for Testing Materials

Open Web Steel Joist Construction, Shortspan Series, Specifications for, A87.1-1957 (Revision of A87.1-1955)
Sponsor: Steel Joist Institute

Reaffirmation Approved

Basis for the Coordinating of Masonry, A62.2-1945 (R 1956)
Sponsors: The Producers' Council; the American Institute of Architects; National Association of Home Builders

CONSUMER GOODS

American Standards Published

Soda Ash, Specifications for, ASTM D 458-55T; ASA K60.11-1956 $0.30

Trisodium Phosphate, Specifications for, ASTM D 538-55T; ASA K60.12-1956 $0.30

Sodium Metasilicate, Specifications for, ASTM D 537-55T; ASA K60.18-1956 $0.30
Sponsor: American Society for Testing Materials

DRAWINGS AND SYMBOLS

Reaffirmation Approved

Graphical Symbols for Heat-Power Apparatus, ASA Z32.2.6-1950 (R1956)
Sponsors: American Society of Mechanical Engineers; American Institute of Electrical Engineers

ELECTRIC AND ELECTRONIC

American Standards Published

General Service Incandescent Lamps for 115-, 120-, and 125-Volt Circuits, C78.100-1956 (Revision of C78.100-1953) $0.25

Miniature Incandescent Lamps, C78.140-1956 (Revision of C78.140-1954) $0.35

A-25 Bulb, Medium Screw Base, Incandescent Lamps, C78.252-1956 $0.25

A-23 Bulb, Medium Screw Base, Incandescent Lamps (Overall Length—maximum 6-5/16 in., minimum 5-7/8 in.), C78.253-1956 $0.25

Dimensional and Electrical Characteristics of 72 Inch T-12 Rapid Start (Mogul Bipin) Fluorescent Lamp, C78.701-1956 $0.25

Fluorescent Lamp Ballasts, Specifications for, C82.1-1956 $0.50

Fluorescent Lamp Reference Ballasts, Specification for, ASA C82.3-1956 $0.35
Sponsor: Electrical Standards Board

American Standards Approved

Safety for Rubber-Covered Wires and Cables, C33.6-1957
Sponsor: Underwriters' Laboratories

Electrical Terms, Definitions of, (Partial revision of C42-1941):
Group 35, Transmission and Distribution, C42.35-1957
Group 65, Communications, C42.65-1957
Group 80, Electrobiology Including Electrotherapeutics, C42.80-1957
Sponsor: American Institute of Electrical Engineers

Overhead-Type Distribution Transformers—67,000 Volts and below, 500 kva and smaller, Requirements for, C57.12c-1957 (as Section 20 of ASA C57.12-1956)
Sponsor: Electrical Standards Board

Lightning Arresters for A-C Power Circuits, C62.1-1957 (Revision of C62.1-1944)
Sponsor: American Institute of Electrical Engineers

In Board of Review

Measurement of Gain, Amplification, Loss, Attenuation and Amplitude-Frequency-Response, Methods of, 56 IRE 3.S1; ASA C16.29
Sponsor: Institute of Radio Engineers

In Standards Board

Cord Sets and Power-Supply Cords, Standards for Safety, C33.3- (Revision of C33.3-1956)
Sponsor: Underwriters' Laboratories

Reaffirmation Approved

Hard Drawn Copper Wire, Specifications for, ASTM B1-53T; ASA C7.2-1953 (R 1957)
Sponsor: American Society for Testing Materials

GAS BURNING APPLIANCES

American Standards Published

Gas Water Heaters, Approval Requirements for, Volume II, Side-Arm Type Water Heaters, Z21.10.2-1956 $2.00

Central Heating Gas Appliances, Approval Requirements for, Volume I, Steam and Hot Water Boilers, Z21.-13.1-1956

Central Heating Gas Appliances, Approval Requirements for, Volume III, Gravity and Fan Type Furnaces, Z21.13.3-1956 $2.00
Sponsor: American Gas Association

MATERIALS AND TESTING

In Standards Board

Alloy Designation System for Wrought Aluminum
Submitted by: Aluminum Association

MECHANICAL

American Standards Published

Carbon-Silicon Steel Plates of Intermediate Tensile Ranges for Fusion-Welded Boilers and Other Pressure Vessels, Specifications for, ASTM A 201-54 T; ASA G31.1-1956 $0.50
Requirements for carbon-silicon steel plates, in two intermediate tensile strength ranges designated grades A and B, intended particularly for fusion welding; for use in locomotive boiler shells, boilers for stationary service and other pressure vessels.

Chromium-Manganese-Silicon (CMS) Alloy-Steel Plates for Boilers and Other Pressure Vessels, Specifications for, ASTM A 202-56; ASA G32.1-1956 $0.50
Requirements covering chromium-manganese-silicon alloy steel plates (CMS) in two high tensile strength ranges, designated grades A and B; up to 2 in. thickness; of firebox quality; for use in boilers and other pressure vessels. Grade A is a ductile material of maximum workability and grade B a high tensile material with sufficient ductility to be workable without heating.

Nickel-Steel Plates for Boilers and Other Pressure Vessels, Specification for, ASTM A 203-56; ASA G33.1-1956 $0.50
Requirements covering nickel steel plates in three tensile strength ranges, designated grades A and D, B and E, and C, intended particularly for fusion welding; for use in locomotive boiler shells, boilers for stationary service and other pressure vessels.

Molybdenum—Steel Plates for Boilers and Other Pressure Vessels, Specification for, ASTM A 204-56; ASA G34.1-1956 $0.50
Requirements covering molybdenum-steel plates, in three high tensile strength ranges, designated grades A, B, and C, intended particularly for fusion welding; for use in locomotive boiler shells, boilers for stationary service and other pressure vessels.

High-Tensile Strength Carbon-Silicon Steel Plates for Boilers and Other Pressure Vessels, Specification for, ASTM A 212-52aT; ASA G35.1-1956 $0.50
Requirements covering carbon-silicon steel plates in two high tensile strength ranges, designated as grades A and B, of flange and firebox qualities; for use in locomotive boiler shells, boilers for stationary service, and other pressure vessels.
Sponsor: American Society for Testing Materials

American Standard Withdrawn

Carbon-Steel Castings Suitable for Fusion Welding for Miscellaneous Industrial Uses, ASTM A 215-44; ASA G51.1-1944
Sponsor: American Society for Testing Materials

NUCLEAR ENERGY

In Standards Board

Glossary of Terms in Nuclear Science and Technology, N1
Submitted by: National Research Council

PETROLEUM PRODUCTS AND LUBRICANTS

American Standards Published

Flashpoint by Tag Closed Tester, Test for, ASTM D 56-56; ASA Z11.24-1956 $0.30
Apparatus, procedure, and calculations for determination of flash point by Tag Closed Tester. Applicable to all mobile liquids flashing below 175 F (79C), method intended for testing of lacquer solvents and diluents of low flash point, but not for products classed as fuel oil.

Water in Petroleum Products and Other Bituminous Materials, Test for, ASTM D 95-56T; ASA Z11.9-1956 $0.30
Apparatus, procedure, and calculations for determination of the water in a sample of bituminous material by distilling the sample with a volatile solvent. It is especially applicable to crude petroleums and tars and products derived from them, such as fuel oils, road oils, creosotes, road tars, and asphalts.
Sponsor: American Society for Testing Materials

American Standard Approved

Selected Values of Physical and Thermodynamic Properties of Hydrocarbons and Related Compounds, Z78.1-1957
Sponsor: American Petroleum Institute

PHOTOGRAPHY

In Board of Review

32mm Motion-Picture Film, 2R-3000, Dimensions for, PH22.71-(Revision of Z22.71-1950)

32mm Motion-Picture Film, 4R-3000, Dimensions for, PH22.72-(Revision of Z22.72-1950)

35mm Anamorphic Prints with Magnetic Sound Records, Usage in Projector, PH22.103

Projector Aperture for 35mm Anamorphic 2.55:1 Prints with Squeeze Ratio of 2:1, PH22.104-
Sponsor: Society of Motion Picture and Television Engineers

PIPE AND FITTINGS

In Standards Board

Stainless Steel Pipe, B36.19-(Revision of B36.19-1952)
Sponsors: American Society of Mechanical Engineers; American Society for Testing Materials

SAFETY

American Standards Published

Fixed Ladders, Safety Code for, A14.3-1956 $1.00
Design and construction requirements for fixed ladders; their attachment to buildings, towers, chimneys, or other structures, and accessories to be used with them.
Sponsors: National Association of Mutual Casualty Companies; American Society of Safety Engineers; American Ladder Institute

Use, Care, and Protection of Abrasive Wheels, Safety Code for, B7.1-1956 $1.00
Sponsors: Grinding Wheel Institute; International Association of Governmental Labor Officials

American Standard Approved

Maximum Acceptable Concentration of Carbon Tetrachloride, Z37.17-1957
Maximum acceptable concentration of carbon tetrachloride for industrial exposures of workmen, not to exceed a total of 8 hours daily. Includes brief discussion of toxic properties, sampling procedures, analytical methods. Includes a bibliography of technical literature on this hazard.
Endorsing Sponsor: U. S. Public Health Service

In Standards Board

Installation of Pulverized Coal Systems, Safety Code for, Z12.1-(Revision of Z12.1-1946)
Sponsor: National Fire Protection Association

TEXTILES

In Standards Board

Definitions of Terms Relating to Textile Materials, ASTM D 123-55; ASA L14.12-

Fineness of Wool, Method of Test for, ASTM D 419-55T; ASA L14.26-

Fineness of Wool Tops, Method of Test for, ASTM D 472-56; ASA L14.29-

Fiber Length of Wool Tops, Test for, ASTM D 519-55T; ASA L14.32-
Sponsors: American Association of Textile Chemists and Colorists; American Society for Testing Materials

WHAT'S NEW ON AMERICAN STANDARDS PROJECTS

Pipe Flanges and Fittings, B16—

Sponsors: American Society of Mechanical Engineers; Heating, Piping, and Air Conditioning Contractors National Association; Manufacturers Standardization Society of the Valve and Fittings Industry.

A broader scope, eliminating all references to specific types of pipes, fittings, and valves, was approved recently by the Mechanical Standards Board for Sectional Committee B16. The committee's work covers designation of materials and pressure temperature ratings and standardization of dimensions of pipe flanges, pipe and tube fittings, and valves, but specifically excludes SAE machinery fittings. Valve dimensions covered are face-to-face and end-to-end.

Pallets, B69 —

Sponsors: American Society of Mechanical Engineers; Industrial Packaging and Materials Handling Engineers

Preparation of a draft standard for horizontal platform devices is now going forward. The draft will include definitions, and sizes.

Ten sizes have been selected from 800 in general industrial use. Ten of these are for rectangular shapes, three for square pallets. The four most popular sizes, the committee has found, are 32 x 40, 40 x 48, 48 x 72, and 48 x 48 in. Others selected are 24 x 32, 32 x 48, 36 x 48, 48 x 60, 36 x 36, and 42 x 42.

F. H. Wiley, International Harvester Company, is chairman of the committee. The work of the committee is centered on what the committee calls "non-captive" pallets. These are defined as "pallets whose cycle extends through one or more military, corporate, or private enterprise." This usually includes a common carrier transport service. Such pallets can be privately or jointly owned by several enterprises.

The committee considered a number of problems in making its selections: (a) adaptability to U. S. carriers (especially rail and truck); (b) trends in rail and trailer sizes; (c) utilization of cubage of rail and truck with 30 lb per cu ft; (d) conformity of most packaged materials to the rectangular and square pallet sizes; (e) flexibility of module combinations (resulting in selection of dimensions which are, in most cases, divisible by 12 in.); (f) adaptability to rail cars having less than 9 ft 2 in. or 9 ft 6 in. widths or to trucks and trailers with less than 7 ft 6 in. widths; (g) the presence or absence of overhang on pallet loads; and (h) to the area ratios of pallet surfaces.

Industrial Cooling Towers, B76—

Sponsors: American Society of Mechanical Engineers; the Cooling Tower Institute; Air-Conditioning and Refrigeration Institute.

The sectional committee on this project is now being formed. Any group interested in membership is invited to write the American Society of Mechanical Engineers, 29 West 39 Street, New York 18, N.Y.

Rotating Electrical Machinery, C50—

Sponsor: Electrical Standards Board

A subcommittee is working with the Bureau of Ships on standards for motors for shipboard use, with the possibility that military specifications may be revised to take advantage of the use of standard features of construction in motors for shipboard use.

Specialty Transformers, C89—

Sponsor: National Electrical Manufacturers Association.

This new sectional committee held its organization meeting January 23. E.J. Thomas, General Electric Company, is chairman; with C.A. Parris, NEMA, as secretary. The committee decided to send proposed American Standard requirements for specialty transformers to letter ballot for approval.

Letter Symbols, Y10—

Sponsor: American Society of Mechanical Engineers

Several proposed American Standards are being voted on by the sectional committee, including Letter Symbols for Feed-Back Control; Letter Symbols for Thermodynamics; and Letter Symbols for Hydraulics.

Drawing and Drafting Practice, Y14 —

Sponsors: American Society for Engineering Education; The American Society of Mechanical Engineers.

Section 14 on Structural Drafting of the proposed American Drafting Standards Manual, Y14, is now being circulated for criticism and comment. This proposed standard recommends preferred drafting practice for the type of structure defined as "an assembly of fixed parts which support or enclose a machine or which constitute a composite permanent sub-assembly of a piece of mechanical or electrical equipment." The proposed standard itself cites as examples a housing or bed plate for a machine; a cabinet for electronic equipment; a boom for a crane; a radar reflector. "Such structures are generally differentiated from structural frames commonly associated with architectural and civil engineering practice," it is explained.

Copies of the proposed standard can be obtained from Frank Philippbar, Standards Department, American Society of Mechanical Engineers, 29 West 39 Street, New York 18, N. Y.

A proposed Section 9 on Forging is nearer completion than is Section 14. The sectional committee is now voting by letter ballot on this proposed standard.

Graphical Symbols, Y32—

Sponsors: American Institute of Electrical Engineers; American Society of Mechanical Engineers

Proposed American Standard Graphical Symbols for Fluid Power Diagrams are being circulated for criticism and comment. Date for final replies is March 1, 1957.

This is the first time graphical symbols have been proposed for this particular application. The proposed standard is intended to complement the work being done in Sectional Committee Y14, Drawing and Drafting Practice, on hydraulic and pneumatic diagrams.

Copies of the draft can be obtained from Frank Philippbar, Standards Department, American Society of Mechanical Engineers, 29 West 39 Street, New York 18, N. Y.

Acoustics, Vibration, and Mechanical Shock, Z24—

Sponsor: Acoustical Society of America.

An exploratory subcommittee has been initiated to look into the feasibility of standards for calibration of ultrasonic cleaning and degreasing equipment.

Maximum Acceptable Concentrations of Toxic Dusts and Gases, Z37

The Safety Standards Board has voted to change this autonomous committee to a regularly organized sectional committee and to invite the American Industrial Hygiene Association to serve as sponsor.

Dr H. H. Schrenk, Research Director, Industrial Hygiene Foundation of America, Inc, Pittsburgh, Penn., has been elected chairman of the committee. He succeeds Dr W. P. Yant, who has served as chairman for many years.

Dr D. D. Irish, Biochemical Research Laboratory, Dow Chemical Company, Midland, Michigan, is vice-chairman.

Standards Outlook

by Leo B. Moore

Mr Moore is Assistant Professor of Industrial Management of Massachusetts Institute of Technology where he teaches a full-term course in industrial standardization.

Standards Reading

The most recent literary effort in the field of standardization is *National Standards in a Modern Economy*, edited by the late Dickson Reck. It is a compilation of articles by leading authorities. Although the articles are on various aspects of standards on a national level of interest, nevertheless, the book does have value for the practicing standards engineer. A few instances of its value are here indicated, not in the nature of a critical review but as a matter of interest, in the general order in which these essays are presented.

"A Million Years of Standards" is a charming and inspiring story of the development of standards activity told in the spirit of the raconteur. You will not only enjoy reading it, but you may wonder whether your company program should have a historian who might some day write, in the same vein, the tale of your standards endeavor in terms of company progress.

Several articles like "National Standards Movement" tend to offer material of substance and give perspective for every standards engineer. Through these, we are reassured on the relationship of the work of the individual engineer and his company group to the total standards picture. After all, the standards movement is much in the nature of the wheel within the wheel and represents a driving, dynamic whole. You feel this relationship and inter-dependence as a living force in articles on "Interchangeable Parts Manufacture," "Standards in Processed Foods," "Complementary Industries," "Telecommunications," "Safety," and throughout many others.

Of particular value to every company standards man are the several essays devoted to the activities of the Federal agencies in this field. Company standards engineers should have a clear picture of these activities and their scope for they have a profound impact on the standards field generally, and on the company program particularly. The developments on standards in the Federal Supply System in terms of both Civilian and Military Goods are of special importance to every company and its management. Both the present and future of these endeavors deserve detailed attention, for they may well serve to convey to management the philosophy and principles of standardization in a most effective manner. The sheer sense of urgency and of value that impregnates these articles may well appeal to the manager, along with the story of standards in agriculture, food and drug regulation, and pharmaceuticals.

Many articles provide some assessment of the implications for the future of standards work. Worthy of particular mention were those on "Automation" and "Resource Conservation." The latter is indeed the most challenging to standards and management in the years ahead. These, together with the treatment of "Industrial Management," should provide a most stimulating experience to every company standards man.

. . . in the home

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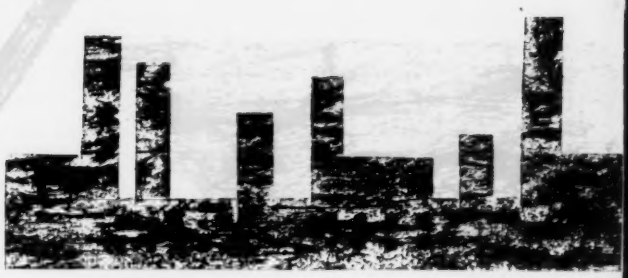

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